Smithsonian

APRIL 2000

The Art of the Flower

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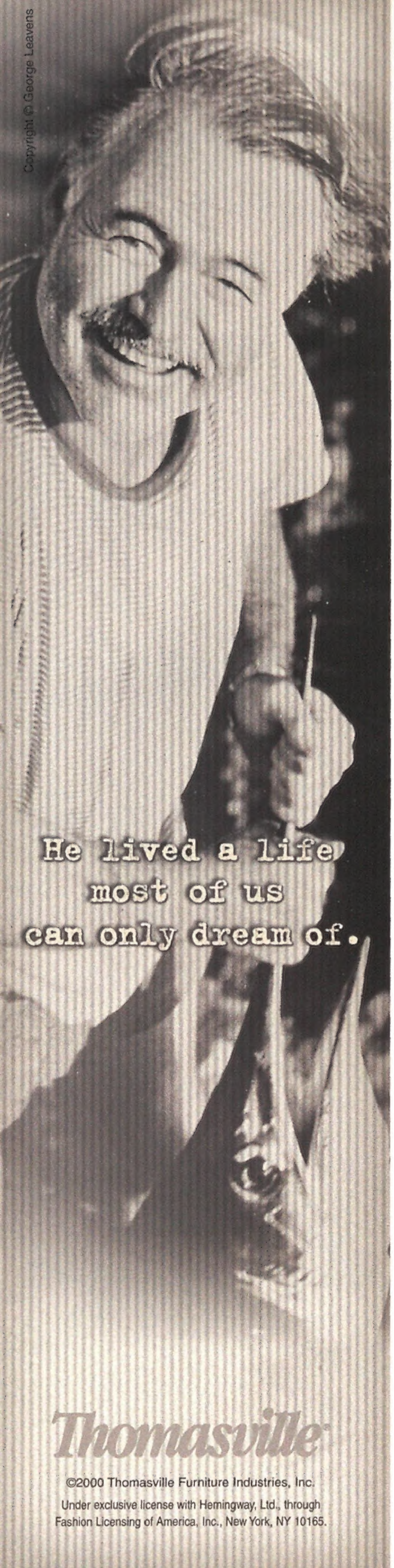
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SMITHSONIAN

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APRIL 2000 ♜ VOLUME 31, NUMBER 1

Cover "*Dahlia I*," says Amy Lamb, "is a back view of the flower at a middle stage of blossom formation. The back attachment of the flower to the stem is still visible. I found this stage beautiful artistically in both form and color."
PHOTOGRAPH BY AMY LAMB

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OR MAKE A DREAM COME TRUE?

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The Gem of the Collection

A NOTE FROM THE SECRETARY

DEMOCRATIC AMERICA HAS NO CROWN JEWELS. BUT we've got the next best thing, or maybe a better thing altogether, in the Smithsonian's National Gem Collection, on display in the National Museum of Natural History in a new setting that suits its splendor, the Janet Annenberg Hooker Hall of Geology, Gems and Minerals.

The gem collection dates back to 1884, when a curator in the Smithsonian's Division of Mineralogy assembled a modest array of American precious stones for display that year at the New Orleans Exhibition. In the ensuing 116 years, the collection has grown to a dazzling scale and beauty, thanks almost entirely to donors who wanted their jewels to be in the nation's museum.

The names of the great jewels in the collection—the Napoleon Diamond Necklace, the Marie-Louise Diadem, the Marie Antoinette Earrings, the Spanish Inquisition Necklace, the Portuguese Diamond, the Hooker Emerald—evoke both the grand realm of history and the dark world of the modern mystery novel. But the most famous of all the gems—not the biggest, but the one that burns so bright in the public's imagination that it's the most sought-out object in the Smithsonian—is the Hope Diamond. Is the diamond named after the emotion? Nothing so fanciful, I'm afraid. Henry Philip Hope, a London banker and gem collector, owned the stone in the 1830s.

Once the property of kings, the legendary Hope Diamond has pride of place in the Janet Annenberg Hooker Hall at NMNH.

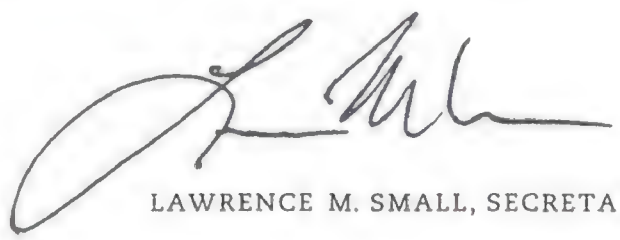
The diamond weighs 45.52 carats and is not blindingly white, as we are accustomed to seeing diamonds, but deep blue. It's in a setting designed by Pierre Cartier—surrounded by 16 alternating pear-shaped and cushion-cut white diamonds, on a chain of 45 white diamonds. Deep-blue diamonds rarely exceed a few carats in size, and the Hope Diamond is, in fact, the largest such diamond known. It was formed a hundred miles beneath the surface of the earth and carried upward by a volcanic eruption more than a billion years ago.

Compared with its geologic history, the diamond's history as an object of human desire has lasted barely an instant. The stone was discovered in India sometime before 1668, the year King Louis XIV bought a blue diamond of 110.5 metric carats that was eventually recut several times to become the jewel we know today. The diamond disappeared with the monarchy during the French Revolution, reemerged in London in 1812, and subsequently became the possession of a British king, George IV. It was then purchased by the aforementioned Mr. Hope, whose family held it through the 19th century. In 1912 Pierre Cartier sold it to the American heiress Evalyn Walsh McLean, whose estate sold it to the jeweler Harry Winston, who donated it to the Smithsonian in 1958, where it has since been on more or less continuous exhibition—though never looking as good as it does today.

The diamond has the place of honor at the head of the gem collection. It rests on a small column that turns slowly to show the jewel in four directions. There's an eerily human aspect to this stately rotation, as if a wearer were showing off the gem, and viewers fall silent under its spell. It's one of the great Smithsonian experiences.

And it is the prelude to other unforgettable experiences that await a few steps away. In the past, when the Hope Diamond was kept at the end of the exhibition, visitors rushed to get to it, paying little attention to anything on the way. A wonderful thing has happened by putting it up front. Visitors see the diamond, and it gets them to wonder what's in the next room, and in the space beyond that. They seek out the other gems and the minerals so beautiful and strange they might have come from other galaxies rather than from our own earth.

Near the end of the display in the Hooker gallery there's a tiny vial of diamond crystals taken from a meteorite—diamonds from the heavens, part of the cosmic cloud that gave birth to our solar system. At one end of the exhibition then, the Hope Diamond, made miles below the earth's surface; at the other, the diamond dust of stars. An astonishing trajectory; an everyday marvel at the Smithsonian.



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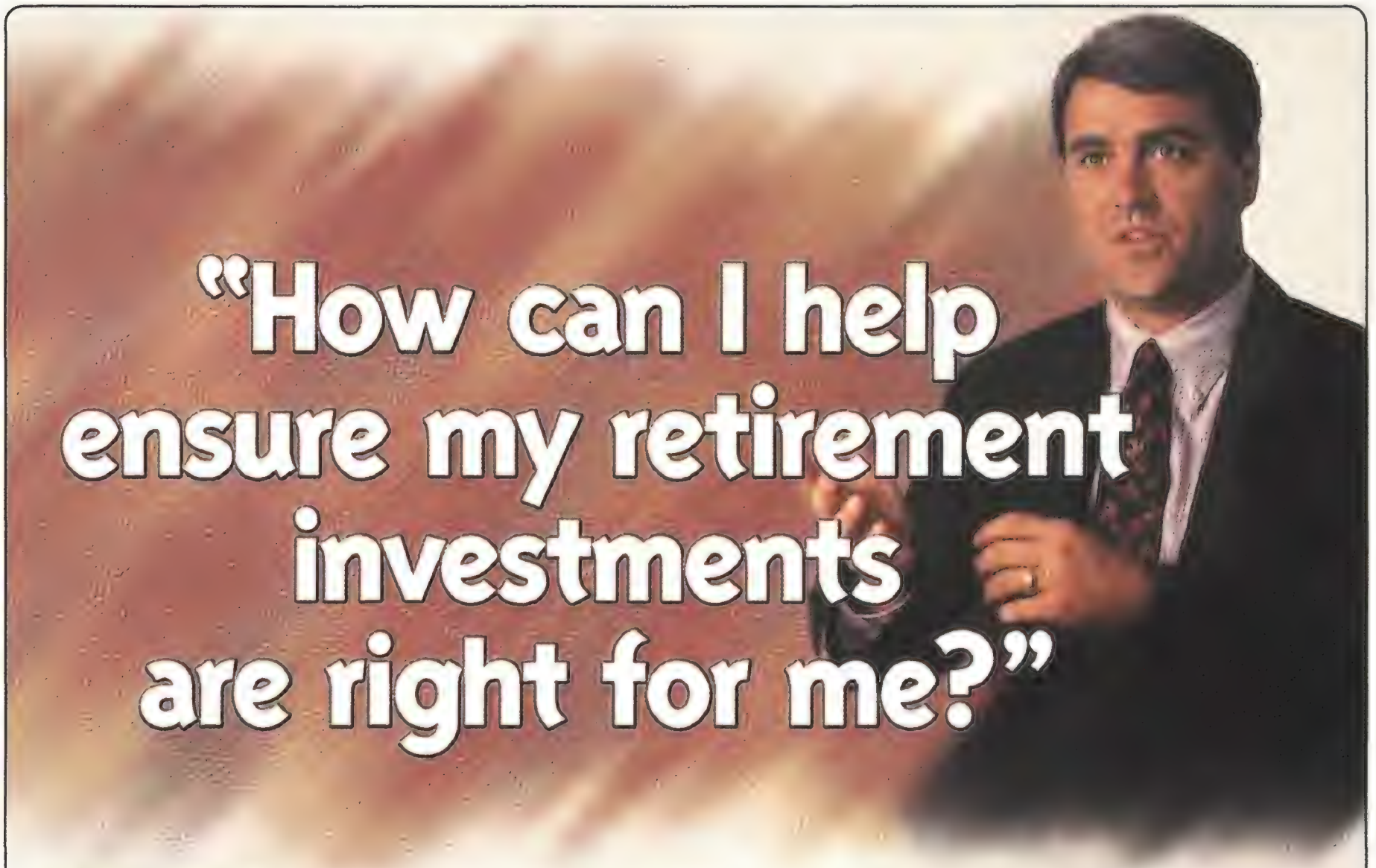

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EELS

"YOU GOTTA REMEMBER, EELS ARE Weird" by Bruce Watson, in the February 2000 issue, took me back to a family vacation when I was 8. We rented a cabin on Molasses Pond, Maine, for a week so my father, an infrequent angler, could fish to his heart's content. On the last day, Dad took my mother and me in the boat, on my first fishing trip. No sooner had my hook dropped overboard, I felt a tremendous tug. I screamed. Dad snatched my child-size pole, which almost bent in two as he struggled with a tremendous eel. He was determined to keep it and shouted to my hysterical mother that eels were "good eating."

In his excitement, Dad grabbed an oar and tried to attack the eel as it writhed on the bottom of the boat, but he missed the eel and whacked a hole in the boat's hull. We headed for shore—the eel still thrashing, both females screaming, water steadily rising. Eventually Dad dispatched the eel and hailed a passing boatman, who towed us back to our dock.

Dad wanted to pay our rescuer, but the man declined Dad's cash, explaining that he'd rather have the eel: "It's good eating."

Susan Meyers Sanders
Plainwell, Michigan

EELS PLAYED A SIGNIFICANT, IF INEFfective, role in one of the greatest criminal cases in American history. Italian immigrants Nicola Sacco and Bartolomeo Vanzetti were tried for two murders committed during an April 15, 1920, payroll robbery of a shoe factory in South Braintree, Massachusetts. The crime was similar to an attempted robbery of the White Shoe Company truck in Bridgewater, Massachusetts, on the morning of December 24, 1919, and the police claimed a link between the robberies and the two Italians.

Vanzetti was indicted for the Bridgewater incident, but he had an alibi. He was a fish peddler and had been working on Christmas Eve. Italians in Bridgewater traditionally prepared eels for Christmas, and several witnesses testified that Vanzetti had been delivering eels to them when the attempted robbery was taking place. The jury rejected the eel alibi, and convicted Vanzetti in July 1920. Two months later, both Sacco and Vanzetti were convicted of the South Braintree crimes and were later executed.

David I. Kelvin
Oakland, California

"WHEN THE EEL IN THE REEF / TAKES your heel in his teeth / That's a moray!"

Joel T. Deweese
Santa Barbara, California

ROBOBIOLOGIST

PAUL TRACHTMAN'S ARTICLE "REDEfining Robots," about Mark Tilden's work in building robots—the competence of which emerges from chaotic, but regulated, patterns of interaction between organism and environment—was fascinating. Although I commend Tilden for his work, his basic ideas of approaching intelligence are not new. Philosopher Hubert Dreyfus has for more than four decades offered precisely these critiques of artificial intelligence and has suggested work along these very lines.

Relevant philosophical literature goes back to Aristotle's discussion of skill. The works of early Heidegger, Dewey, Sellars, Brandom and Merleau-Ponty contain theories that explain knowledge in terms of skills, the success of which depends upon their relationship to the environment.

The point here is not to claim bragging rights, but to suggest that we might save lots of time if we communicated more freely. There is much work in the philosophy of language and epistemology on the questions that seem to puzzle Tilden, namely how to understand the emergence of genuine explicit computation out of an organism built around chaotic embedded skills.

Mark Lance
Associate Professor of Philosophy
Georgetown University
Washington, D.C.

I WAS INTRIGUED TO READ THAT Mark Tilden's creations could be used one day in clearing minefields. These low-tech, inexpensive analog robots would be a service to humanity.

Alex Tanner
Davenport, Iowa

THE OBJECT AT HAND

I READ WITH GREAT INTEREST "LAST of the Wild Buffalo" by Hanna Rose Shell. You did not mention the contribution that my grandfather, Dr. Valentine T. McGillycuddy, made to Dr. William Temple Hornaday's initial collection of live buffalo that became the nucleus of the National Zoological Park.

Dr. McGillycuddy became Gen.

WRITE TO SMITHSONIAN

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The three bulls and one cow that Dr. McGillycuddy sent to Washington, D.C. arrived on October 10, 1889. Dr. Hornaday wrote to my grandfather that the "four buffaloes arrived here in fine condition. We hauled them to the buffalo yard in two big closed U.S. Mail wagons without any serious difficulty. . . . They are a most welcome addition to our stock for the new zoo and are bound to attract much attention."

Dr. McGillycuddy's conviction, which Dr. Hornaday shared, was that the buffalo should be displayed to as many Americans as possible as a means of building support for the long-term conservation of this species.

Delio McGillycuddy Gianturco
Falls Church, Virginia

BLACKBEARD

THANK YOU FOR "A FURY FROM HELL—OR Was He?" by Constance Bond about Edward Teach, better known as the infamous pirate Blackbeard.

As Ms. Bond wrote, privateers had permission from Britain to keep a percentage of the loot from pirated French and Spanish ships. This benefited the College of William and Mary in Williamsburg, Virginia. The Rev. James Blair, who founded the College of William and Mary in 1693 and became its first president, was in London during the winter of 1691-92, trying to secure the Royal Charter necessary to establish the college and raising money for its founding. Blair learned that three pirates had been unsuccessfully petitioning the Crown for their booty, which a Captain Roe had taken from them after he seized their ship in Virginia waters. The men argued that they were privateers and had a right to the spoils.

Blair interceded on the pirates' behalf by having a word with the Bishops of Canterbury and London, who in turn spoke to the government. Before the reverend secured the money for the privateers—Davies, Hinson and Delawafer—the three men promised to give him the sum of 300 pounds for the new college.

A ledger in the early records of the College of William and Mary shows the sources of the first monies given to support the school. Among these is the notation: "By money obtained of the Privateers . . . 300 pounds."

Stacy Belcher Gould
Acting University Archivist
The College of William and Mary
Williamsburg, Virginia

GARGOYLES

THANKS TO ROBERT LLEWELLYN FOR his fine photographs of the Washington National Cathedral's gargoyles. Long ago, as I strolled around a Virginia cemetery, admiring the stonework, carver Vincent Palumbo appeared out of nowhere and explained the different types of stone, their grades and why the stone carver had selected each one.

Donald H. Crockett
Mineral, Virginia

YOU MENTIONED THAT DOZENS OF stone carvers worked on the sculptures at Washington National Cathedral besides Vincent Palumbo, Roger Morigi and Frank Zic, the three men that John F. Ross mentioned in his text block. In 1959-60, a gargoyle competition was held that was open to anyone who was interested. A jury selected 12 winners from the plaster of Paris models, and the winning designs were copied into stone.

Berthold Schmutzhart
Fredericksburg, Virginia

Most of the 112 gargoyles were creations of the carvers, classical subjects and requests from donors. Ed.

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Bone Specialist On Call

A SMITHSONIAN ANTHROPOLOGIST APPLIES HIS EXPERTISE TO CASES OF MISSING CHILDREN AND DISASTER VICTIMS

BY MICHAEL KERNAN

THE SKELETON OF A CHILD, 10 TO 12 YEARS OLD, HAD been found in the desert near Las Vegas, Nevada, and forensic experts had composed a picture of a likely face that matched the skull. The local medical examiners thought the victim was a girl, going partly by the denim shorts and other material found with the body, so the computer reconstruction had long hair and girlish features.

The picture was sent out to police all over the country. Nobody responded.

Then Las Vegas authorities sent the skull to the National Center for Missing and Exploited Children in Arlington, Virginia. Steve Loftin, one of the center's age-progression specialists, called in David Hunt from the Smithsonian's National Museum of Natural History. Hunt, an expert in skeletal biology who has considerable experience in forensic anthropology, spent several hours examining the skull—taking measurements, studying the teeth, the nasal opening, the shape of the eye socket, assessing the overall morphology.

"I began looking at the skull," Hunt said, "and in a way it was lucky I didn't have the clothing and other external evidence that the police had, so I wasn't biased. Something about the shape of the head and the dental development suggested it was a boy's."

That was in September 1998. Last June the case was aired on TV's *America's Most Wanted*. The girlish version, shown first, caught the attention of a man whose 10-year-old son had been missing three years, but he dismissed it because the child was assumed to be a female. Then the show put up an alternative, the center's computer reconstruction of a boy, based on Hunt's analysis.

"The father's heart sank to the floor," Loftin told me. It was the lost boy come to life, overbite and all. Dental records confirmed the match, and another sad and baffling case was solved.

What amazes me is the number of unidentified skeletons found every year in fields and forests around the country. This was the seventh case of the year for Loftin's department, but police attending seminars at the center say that many more human remains are waiting in station storage rooms all over America for someone to put a name to them.

"Hunt is a gold mine resource to the center," Loftin said. "We can't thank him enough."

Sensing that the Las Vegas skull was that of a boy was no mere hunch for Hunt. He has worked with thousands of human remains over the past 20 years—modern, historic, pre-Colombian, prehistoric—and this skull struck him, from certain features, as more likely male.

"In forensic skeletal analysis we use methodologies that are commonly used in archaeological investigations," he explained.

The National Center for Missing and Exploited Children asks the Smithsonian's David Hunt (above) to assess unidentified skulls.

DENNIS DRENNER

They have helped identify bodies in the Oklahoma City bombing and the Waco fire.

A vast forensic database of skeletal measurements at the University of Tennessee aids in the analysis of the gender and ethnicity of a subject. "Anthropologists avoid the term 'race,' but law enforcement agencies still refer to four main population groups: white, black, Asian and Hispanic."

Some differences among the groups show up in bone lengths, but most appear in the cranial structure. "A long-headed Nordic skull, for instance, would look quite different from a Hispanic one," Hunt said. "But now there is a lot more genetic interaction, an effect of our transient and mobile society, so you get a blending of these features."

In addition to overall size and shape, there are other variances in skulls. From the nasal aperture you can tell about how wide the nose was, and if the nasal bridge (the spot between the eyes where the nose begins) is preserved, it can suggest a large or small nose. The nasal spine, a bony projection at the base of the aperture, might indicate whether a nose hooked down or turned up.

"Many of these features are literally just skin deep," Hunt said. "The next stage is one of my specialties, craniometric analysis, which is the study of skull measurements. You put about 80 measurements into a computer to get an analytical model that best fits one of the main population groups."

Subtle deformations of bone can even hint at an adult's occupation, as constant use of a certain muscle will literally pull the bone it is attached to, misshaping it slightly and creating, for example, a heel spur.

But how do you go about identifying a child, say one who was abducted as an infant and is found at age 7?

"First of all, you need to understand what happens when the baby fat goes away," Hunt said. "Children grow at different rates, with spurts at various times. At 4 to 6 years they have big heads because the brain case is larger than the face. Then around the third grade, the face starts growing and pretty soon a kid has a bigger face."

Teeth are also a major clue to age, he said. "In the first grade kids lose their front baby teeth, and their permanent ones begin coming in. The teeth of Hispanics tend to grow in four to six months sooner than those of whites.

"Then the mandible (lower jaw) grows and the maxillary (upper jaw) grows," Hunt continued. "By the fifth or sixth grade, the molars are coming in. When you look at photographs of kids that age, many seem to have pointy chins. It's because their lower faces are growing."

Other very noticeable changes occur again between 12 and 14, when the brain case expands and the body length increases, while the facial growth slows down. These changes are heavily influenced by sex hormones. "Before the sex hormones kick in," Hunt said, "it's very difficult to identify a child's sex from the skeleton."

One problem facing experts like Hunt is the shortage of identified skeletons of children to study. "Understandably, few families choose to donate their children's remains for scientific research," Hunt said.

A sad business. But the center also finds live children among the almost 6,000 active cases in its files. Fortunately, the great majority of them are rescued alive. About a million children under 18 disappear every year in America, most of them for only a short time: runaways, kids abducted by parents, kids abducted by strangers, and some who are just lost.

Age-progression specialists like Steve Loftin can take a snapshot of a toddler and, on a computer screen, make the child look older (SMITHSONIAN, October 1995). The expert begins by stretching the child's image on the computer. To mature the face, he merges it with childhood photographs of the parents at the current age of the missing child, borrowing certain features, bringing out the cheekbones, thinning down baby fat and lengthening the jaw. The results can be startlingly accurate and have proved invaluable in rescuing missing children.

Long ago David Hunt knew he was going to be an anthropologist. "I remember reading those articles in *National Geographic* as a kid in the '60s about Louis and Mary Leakey, the excavations in Africa and Europe—they all fascinated me."

At the University of Illinois he soon found his niche in the study of bones, specifically human osteology and skeletal biology. After receiving his master's degree and doctorate in physical anthropology at the University of Tennessee, Hunt joined the Museum of Natural History staff in 1990.

"It was the ability to derive a synopsis of the life of prehistoric humans from their remains that made me decide to pursue this career," he said. "It's all a big jigsaw puzzle."

It really is. People get buried six feet deep, and the weight of the dirt distorts the skeleton, crushing the skull so that it has to be reconstructed before study can get under way. Even a casket sooner or later will let in water and collapse.

Working on historical cases is interesting, but applied forensics, in which researchers try to match skulls with photographs of actual people, is often more rewarding.

Hunt and his Smithsonian colleagues are on call in the wake of plane crashes and other disasters. They have helped identify bodies in the Oklahoma City bombing, the Waco fire and the mass graves of Bosnia and Croatia.

After the Mississippi and Missouri rivers flooded in 1993, and water destroyed cemeteries, washing caskets from the earth and hopelessly jumbling them, Hunt was called in. Working with FBI fingerprint specialists and pathologists and dentists, he helped identify bodies for reinterment.

"You don't want to say the work is satisfying, that sounds kind of weird, but I feel I need to return something to the community with my specialized training. Hopefully, my work will help connect people with missing loved ones."

Evidence for a Flood

SEDIMENT LAYERS SUGGEST THAT 7,500 YEARS AGO MEDITERRANEAN WATER ROARED INTO THE BLACK SEA

BY JAMES TREFIL

"... THE FOUNTAINS OF THE GREAT deep [were] broken up, and the windows of the heavens were opened. And the rain was upon the earth forty days and forty nights."

This quote from the Book of Genesis is part of a familiar tale—the story of Noah's flood. Scholars have known for a long time that the Bible isn't the only place this story is found—in fact, the biblical story is similar to a much older Mesopotamian flood story in the epic of Gilgamesh. Scholars usually attribute things like the worldwide occurrence of flood stories to common human experiences and our love of repeating good stories, but recently scientists have started to uncover evidence that Noah's flood may have a basis in some rather astonishing events that took place around the Black Sea some 7,500 years ago.

The scientific version of Noah's flood actually starts long before that, back during the last great glaciation some 20,000 years ago. This was a time when the earth looked very different from what we are used to today. Thick ice sheets extended down from the North Pole as far as Chicago and New York City. All that water had to come from somewhere, so ocean levels were about 400 feet lower than they are today. In essence, water that evaporated from the oceans fell as snow (which was compacted into glacial ice) rather than rain (which would flow back and replenish the oceans as it does now). The East Coast of the United States was 75 to 150 miles farther out than it is today, and places like Manhattan and Baltimore would have been inland cities.

Solid ground has reappeared as a dove released from Noah's Ark flies out over the bodies of the victims, human and animal.

During this period, meltwater from the European glaciers flowed down to the Black Sea basin, then out through a river channel into the Mediterranean. Because the Mediterranean is connected to the world ocean at Gibraltar, it was also 400 feet lower than it is today, so this flow of fresh water through the Black Sea was downhill.

Two geologists at Columbia University's Lamont-Doherty Earth Observatory have offered a new theory of what happened next. William Ryan and Walter Pitman, in *Noah's Flood* (Simon & Schuster), postulate that as time went on, the world warmed, the glaciers retreated and meltwater from the European glaciers began to flow north into the North Sea, depriving the Black Sea of its main source of replenishment. The level of the Black Sea began to drop, and most of the area around its northern boundary—the area adjacent to present-day Crimea and the Sea of Azov—became dry land. At this point, the level of the Black Sea was several hundred feet below that of the Mediterranean, and the two were separated by the barrier of the Bosporus, then dry land. This situation, with the world ocean rising while the Black Sea was falling, could not last forever. Eventually, like a bathtub overflowing, the Mediterranean had to pour through into the Black Sea basin.

The idea that ocean basins can flood catastrophically during periods of rising sea levels is nothing new in geology. Five million years ago, long before there were any humans around, just such an event occurred.

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Mikhail Baryshnikov *on* Robert Mondavi.

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The level of the Atlantic Ocean had dropped, or some tectonic event had occurred, with the result that water could no longer get through, and the Mediterranean gradually shrank down to a desert spotted with a few salty bits of ocean. Subsequently, when either the Atlantic rose again or another geological change took place, ocean water began pouring back into the former sea. The basin filled, and the present-day Mediterranean was created.

We know such things because sediments reveal history. Ryan and Pitman began taking cores of the present-day Black Sea. The cores seemed to be telling a strange story indeed, particularly in the northern areas. At the very bottom of the cores, dozens of feet below the present seafloor, they found layered mud typical of river deltas. Carbon-dating of shells in this mud indicates that it was laid down between 18,000 and 8,600 years ago. This data showed that an area of the Black Sea about the size of Florida might have been much like the lower Mississippi Delta today—rich farmland with an abundant supply of fresh water.

Directly above the layers of mud is a layer of what Pitman calls "shell hash"—an inch-thick layer of broken shells—overlain by several feet of fine sediment of the type being brought into the Black Sea by rivers today. The shells in the "hash" are typical of what was in the Black Sea when it was a body of fresh water. The fine sediments contain evidence of saltwater species previously unknown in the Black Sea. It is the interpretation of these layers that tells us what happened on that inevitable day when rising sea levels in the Mediterranean reached the base of the sediments at the bottom of the Bosporus—and all hell broke loose.

When the Mediterranean began to flow northward, it "popped the plug" and pushed those sediments into a "tongue" of loose sediment on the bottom of what would become the present-day Black Sea (this tongue can still be seen in cores taken from the ocean bottom in that area). As the flow of water increased, it began to cut into the bedrock itself. The rock in this area is broken—Pitman calls it "trashy"—and even today rockslides are a major engineering problem for roads cut into the cliffs alongside the Bosporus. The incoming water eventually dug a channel more than 300 feet deep as it poured into the Black Sea basin, changing it from a freshwater lake to a saltwater ocean. In this scenario, the mud beneath the shell hash represents sediments from the rivers that fed the freshwater lake, the shell hash the remains of the animals that lived in that lake, and the layers above it the result of the saltwater incursion.

The overflow from one sea to another had a volume 200 times that of Niagara Falls.

It was this event that Pitman and Ryan believe could be the flood recorded in the Book of Genesis. The salt water poured through the deepening channel, creating a waterfall 200 times the volume of Niagara Falls (anyone who has ever traveled to the base of the falls on the *Maid of the Mist* will have a sense of the power involved). In a single day enough water came through the channel to cover Manhattan to a depth at least two times the height of the World Trade Center, and the roar of the cascading water would have been audible at least 100 miles away. Anyone living in the fertile farmlands on the northern rim of the sea would have had the harrowing experience of seeing the boundary of the ocean move inland at the rate of a mile a day.

In addition, Pitman and Ryan point out what archaeologists who study ancient civilizations have known for a long time: that at roughly the time of the flood, a number of people and new customs suddenly appeared in places as far apart as Egypt and the foothills of the Himalayas, Prague and Paris. The people included speakers of Indo-European, the language from which most modern European and Indian languages are derived. Pitman and Ryan suggest that these people might, in fact, represent a diaspora of Black Sea farmers who were driven from their homes by the flood, and that the flood itself might have been the cause of the breakup of Indo-European languages.

Unfortunately, the evidence for this diaspora is a good deal less solid than the evidence for the flood itself. Linguists have long known how to reconstruct ancient languages by looking at words that have survived in the descendants of those languages today. The date of an event like the split-up of the Indo-European languages can then be estimated by comparing those words with artifacts found in excavations—a language probably won't have a word for "wheel," for example, unless it actually uses wheeled vehicles. "It is unlikely that the Indo-European languages split up before 3500 B.C. (that is, 2,000 years after the Black Sea flood)," says University of Chicago linguist Bill Darden, basing his conclusion on this sort of argument. If he and his colleagues are right, then the diaspora part of the flood story will be just another beautiful theory shot down by ugly facts.

Walter Pitman accepts that there is controversy on this part of his thesis, but can't resist one final irreverent geologist's observation: "When you look at the settlements those people built," he says, "not one of them is less than 150 feet above sea level!"

POINTS OF INTEREST

Wanted, Dead or Alive

WHEN SCIENTISTS GO SCAVENGING AT A BIOBLITZ, ANYTHING THEY CAN FIND THAT'S ORGANIC IS CONSIDERED FAIR GAME

BY RICHARD CONNIFF

At a park in Hartford, Connecticut, bug catchers nab moths and other insects attracted to an illuminated bedsheet.

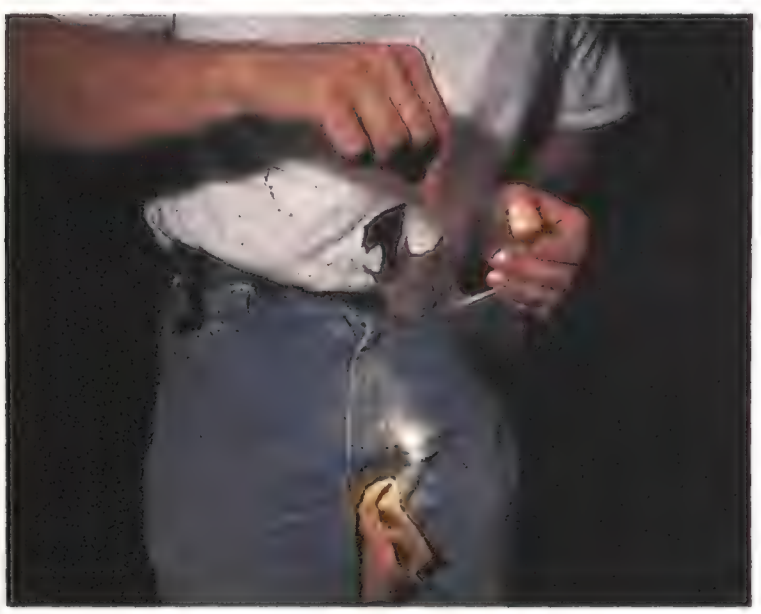
C. M. GLOVER

MY WORK AS A WILDLIFE WRITER often takes me to the Amazon and the African grasslands. I tell friends back home they don't really need to travel to see wildlife: the insects and other weird little creatures in our own backyards are at least as interesting as any elephant. But I can tell they don't much believe me. So I was curious to see what would turn up one weekend last summer at a BioBlitz in Hartford, Connecticut, a nearby city not generally known for unusual life-forms.

A BioBlitz is an event in which dozens of scientists fan out across some unlikely habitat, hell-bent on recording every species they can find, dead or alive, in a 24-hour period. The scientists launching themselves into Hartford's 695-acre Keney Park at 3 P.M. that Friday were armed with spotting scopes, sweep nets, pit traps, scalpels and fish stunners. They were prepared to dance like butterflies, sing like chickadees or do almost anything else this scavenger hunt required. One collector was seeking someone to donate bait for his dung beetle trap. Another was erecting what looked like a device for extracting sunbeams from cucumbers.

It consisted of a big galvanized-steel funnel mounted on a tripod, and it was actually meant to extract animals from soil samples. With a coffee can, a slight, white-bearded man named Carl Rettenmeyer cut out a disk of grassy soil and leaf litter "about the size of a quarter-pounder, with lettuce." This sample would sit overnight on a screen in mid-funnel, with an electric light overhead to make things uncomfortable, and a killing jar below to collect whatever came creeping out. By Saturday afternoon, the "quarter-pounder" of lawn alone would yield 23 separate species, and 89 individual animals, including mites, thrips and an awful lot of springtails, "little bitty things smaller

than the head of a pin." The springtails run around with their tails tucked under their abdomens, spring-loaded so that, in case of danger, they can execute a "we-outta-here" backflip, six inches into the air. It is a skill two-legged city-dwellers can only envy.



A scientist gingerly removes a big brown bat from a mist net set up near a creek in the park (above). Later, volunteers catch a few winks in tents (top).

"The area of the sample is 11.044639 square inches," Rettenmeyer said. "Now multiply that by . . . " Then he came up with his best estimate: that there are 50 million individuals in just the top inch of soil in an ordinary acre here, and 35 billion animals in Keney Park—nearly six for every man, woman and child on earth.

"People are hearing that word 'biodiversity,' but they think it's in the rain forest," said Ellen Censky, director of the Connecticut State Museum of Natural History at the University of Connecticut. "The BioBlitz is a way of letting them know there's a lot of biodiversity right here."

It's also a lark, the closest most scientists will ever get to a varsity sport. Censky is a wry, enterprising sort who once proposed a museum exhibit that consisted of a dead elephant in a room full of flesh-eating dermestid beetles. It didn't happen (some nitpicky problem with ventilation), but it showed a certain flair for ecological entertainment.

BioBlitzes have become regular events around the country since the first one took place four years ago in Washington, D.C. Censky's team was hoping to top the record of 1,905 species found in a 1998 biodiversity survey around Walden Pond, outside Boston. She had assembled her roster with a coach's eye for covering all positions, from fish-squeezers to bat-grabbers. She was piling on entomologists with a knack for quickly identifying obscure insects. She had specialty teams, too, including an algae expert and a parasitologist.

Out in a wooded section of the park, a herpetologist named Hank Gruner had just caught a garter snake, which promptly regurgitated a wood frog. Two species for the price of one. Gruner started flipping over old furniture someone had dumped. "Herpetologists love debris," he said, snatching up a writhing, glossy-purplish creature in his palm, his 25th red-backed salamander in the past hour. "By biomass, they actually outweigh the birds, and they're equal to the small mammals," he said, letting it go again. "All that with no lungs. They breathe by diffusion through their skin and through their throat."

Elsewhere in this depressed neighborhood in Hartford's north end, the algae expert found a green alga closely related to the one from which all land plants on earth appear to have evolved. *Coleochaete* grows on cattails and rushes, she said, and it's probably 500 million years old. Keney Park was also discovered to be home to freshwater sponges, as well as to symbiotic algae, which live on the sponges and spoon-feed them the by-products of photosynthesis. The larvae of two species of spongilla fly feed, in turn, on the sponges, sucking up a soup of algae and cellular fluids. One species moves away from the sponge just about the time of year the other arrives to make its home there, like vacationers time-sharing a condo.

At 10 P.M. two biologists had rigged 30-foot-long mist nets across a shallow stream, and bats in the thrall of the hunt promptly got their leaflike wings tangled in the netting. One of the bat experts delicately extricated them, protecting himself with—what else?—a batting glove. He tucked one big brown bat into a cardboard toilet-

P.21 C.M. GLOVER; C.M. GLOVER (2)

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paper roll, and the roostlike snugness calmed the creature down long enough for it to be weighed in at 13 grams before it fluttered free.

Around midnight out in the woods, a black light set up by the entomologists cast a faint purple glow among the dark tree trunks. Nearby, a host of light-dazzled wolf spiders, water bugs, beetles and slug moths assembled on a reflective bedsheet. The BioBlitz crew set to work, and the air was filled with the sound of killing jars opening and the smell of ethyl alcohol. A beetle expert got on his knees and sucked up specimens, *pfft-pfft*, into an aspirator jar. Someone told a story about a scientist who didn't realize he was working with an inefficient aspirator. "He wound up with 70 insects in his sinus cavity. An entire ecosystem. Alive. They published an article about it." The beetle guy went *pfft-pfft*, undaunted.

Things quieted down till just before dawn. Then the birders came out and stood around, heads cocked, hands in pockets, at odd angles to one another, listening. "It sounds like a worm-eating warbler," said Frank Gallo, who clearly wasn't expecting to find the species here. "Before I write this down I want to hear it better." He bashed in through the undergrowth and called out *pish-pish-pish*, engaging the bird in a short dialogue. "Pine warbler," he pronounced, satisfied now. Next Gallo did an admirable imitation of a chickadee, bursting out in a high nasal *deee-deee-deee*. Other species flock around when they hear a chickadee call, he explained.

Good sightings began to pile up as the morning grew long: a bald eagle, a 12-inch-long pileated woodpecker, a coyote. At a table back at headquarters, a parasitologist picking through the guts of a grasshopper came up with two parasites practicing syzygy, which means that they were mating head to tail. One scientist triumphantly picked a tick off someone's leg, and when a cat-mauled short-tailed shrew showed up just outside the door, the maggots got counted, too.

"I know some of you won't be happy to hear this, but we were delighted to find 35 species of parasites."

As the witching hour drew near, lepidopterist Dave Wagner had 295 species of moths and butterflies. "I wish I could get 5 more," he lamented. "How much time do I have? Twenty minutes?" He started to pick through the insect refuse piles where others had been working. "Twenty-seven ants!" someone yelled.

"No more insects," said the woman who was keeping the insect tally, 60 seconds from the 3 P.M. deadline. "No more nothin'."

"I'm up to 305," said Wagner.

"That's it, Dave. We're not counting any more."

". . . 306. . . 307." It was the lepidopteran equivalent of a long-distance runner in his final unstoppable sprint.

"Wait! I haven't given you my dung beetles yet," another entomologist yelled, fondly cradling his entire collection in a jar lid.

A small crowd had gathered outside to hear the final count for this BioBlitz. It came to 1,369 species. Less than the record at Walden Pond. "Wait'll next year," someone muttered. (Censky's crew will try again on June 2 in Meriden, Connecticut. The Massachusetts survey will take place June 9-11.) "I know some of you won't be happy to hear this," the parasitologist was telling the crowd, "but we were delighted to find 35 species of parasites. So congratulations, Hartford." And from the enthusiasm in her voice, you could tell that the weird little creatures in our own backyards, even down to the lowliest flatworm, were as glorious to her as a pride of lions.

A researcher examines a bag full of beetles collected that night (left). The next day, youngsters look at frogs in a tank set up for the public (above).

C. M. GLOVER (2)

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The Biggest One That Didn't Get Away

A REAL FISH TALE HANGS ON A MONSTER MARLIN CAUGHT NEARLY A HALF-CENTURY AGO ◆ **BY ADELE CONOVER**

A hooked black marlin, estimated at about 550 pounds, "tailwalks" behind a boat off the Pacific coast of Panama. This fish was later released unharmed.

DR. HANS PFENNINGER, HERRLIBERG, SWITZERLAND

AN EXCELLENT FISH IS THE immense black marlin whose golfball-size blue eyes stare down from its simulated "waters" over the doors of the executive conference room of the National Museum of Natural History. At 1,560 pounds, it is officially recognized as the largest bony fish ever caught on rod and reel, a record that has stood since August 1953, when donor Alfred C. Glassell, Jr., caught the 14-foot-7-inch female eight miles off the steep shoreline of Cabo Blanco, Peru, where the Andes plunge into the Pacific. Glassell chose this fishing ground because that's where the cold Humboldt Current meets upwelling eddies of marine life. More than 30 large females were hooked in the area at that time.

Glassell's record "grander"—meaning a black marlin weighing more than 1,000 pounds—was one of four he caught there. His success prompted S. Kip Farrington, a well-known fishing writer, to call him the "rod and reel Young Man of the Sea." *Sports Illustrated* put Glassell and his big fish on the cover in March 1956. Big game fishing had definitely "arrived" as a competitive sport.

Topping the elusive 1,000-pound mark was the goal among billfish game fishermen then—and still is. It had taken three decades to beat the mark set by Capt. Laurie Mitchell, western-novel writer Zane Grey's fishing captain and friend, who hooked a 976-pounder near New Zealand in 1926. Grey, himself, had actually managed to land the first 1,000-pound-plus game fish taken on rod and reel—a Pacific blue marlin—but it was eventually disqualified by International Game Fish Association rules as a record because it had been "mutilated" by sharks before it was brought to the boat.

Glassell's "Mount Everest" of a fish was caught with a five-pound mackerel bait—a mere bonbon for a fish known to down a 200-pound yellowfin tuna in one fell swoop. Soaring out of the water 49 times, Glassell's big marlin "greyhounded" and "tailwalked" along what was known then as "Marlin Boulevard." It took Glassell an hour and forty-five minutes to catch his fish.

Perhaps the big fish's aerobatics were designed to "show" Glassell "how big he was," as protagonist Santiago thought his black marlin was doing in Ernest Hemingway's *The Old Man and the Sea.* (Hemingway, whose story was based on fact, speculated that Santiago's fish was a 1,500-pounder.) However, Glassell's black marlin had practiced these maneuvers many times, like its distant cousin the swordfish, who, as Aristotle observed, "leaps out of the sea as high as the

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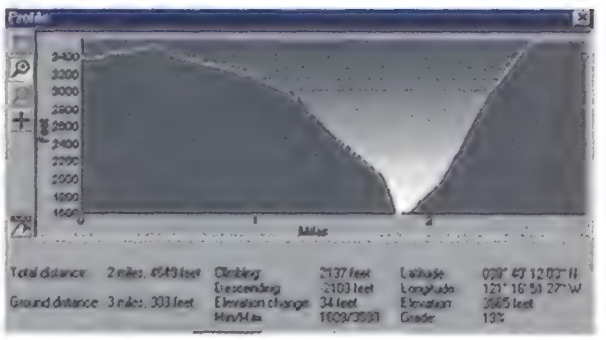

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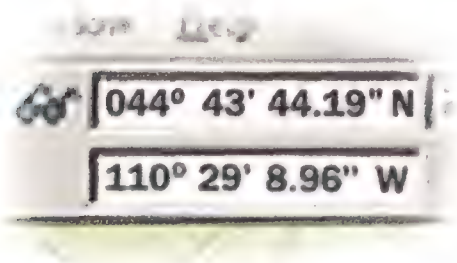

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At 1,560 pounds, Glassell's black marlin is recognized as the largest bony fish ever caught on rod and reel.

dolphin" to purge itself of parasitic copepods. The "little worm . . . which resembles a scorpion, and is about the size of a spider, causes them to suffer." More likely, Glassell's grander was trying to rid itself of the hook. Billfish, including black marlin, also have the ability to regurgitate their stomachs and reswallow them without ill effect—as they are constantly assailed by the spines, barbs and bones of their prey as well as the hooks of fishermen.

The black marlin is one of the largest bony fish: long-liners—commercial fishers whose lines may stretch for 50 miles and trail 3,000 hooks—have reported catching 2,600-pounders. Zane Grey described one an estimated 23 feet long that got away in 1928, and the "twenty-eight-foot one the natives had seen repeatedly alongside their canoes" at Tautira. Australian gamefish charter captains now say that they've seen Glassell-record-beating marlin off Cairns and the Great Barrier Reef. Glassell—who concedes these giants are out there—says, "It's one thing to see one and quite another to land it on the dock." Time has proved him right.

Although usually it's the *potential* record fish that is lost, the same fate almost befell Glassell's massive marlin a few years after he donated it to the Smithsonian. It was 1989, and part of the National Museum of Natural History's Sea Life Hall, where the fish had been displayed, was dismantled for renovation. Glassell, visiting the museum and failing to find his fish, returned home to Houston and wrote to then-director of the museum Frank Talbot. Talbot, who was new on the job, said he had no idea where it was. A search was launched. Meanwhile, a concerned Glassell met with the Smithsonian's then-Assistant Secretary for Science, Robert Hoffman. The museum staff found the big fish—too big to store—hanging in the halls of the museum's Support Center in Suitland, Maryland. More recently it moved back to its present home in a museum display area.

Often referred to as the "bulls" of the sea, the trophy black marlins are really females. "Males," says Australian ichthyologist and billfish expert Julian Pepperell, "only reach 400 pounds at most." Still, some writers, filmmakers and sportsmen have referred to the big marlin as males. Even Hemingway, who you'd think could figure out the sex of anything, referred to Santiago's big fish as a male—unaccountably so, as he had written in 1935, 17 years before *The Old Man and the Sea*, "I believe the black marlin are old female fish past their prime. . . . " When Zane Grey snared his off-the-record thousand-pounder, he wrote: "Out he blazed again, faster, higher, longer, whirling the bonito [bait] around his head."

But in the marlin world a bigger mother is better. From a biological perspective that makes perfect sense. A black marlin female has to haul around between 80 million and 250 million ova, according to Australian scientists. And despite broadcast spawning of several million eggs at a time, only ten in a million survive. Starting out pin-size, the young marlin and its multitude of siblings seek to grow to 75 pounds in their first year. They must. They have many enemies, including parents, siblings, sponges, jellies, birds, mammals and other fish. The larval fish look completely different from the adults. The larvae are armed with spines which, says Carole Baldwin, larval fish specialist at the National Museum of Natural History, "may make them seem bigger or unpalatable." They grow for as long as they live, which may be for decades once they reach an intimidating size. Glassell's black marlin is thought to be 30 years of age. But aging a black marlin is guesswork. "No one really knows for sure," says Pepperell. "It's not as if you can cut off its bill and count the rings."

Few creatures are such masters of their natural element. Black marlin hear low-frequency vibrations, and while they may not have a highly developed sense of smell, the fish do have excellent vision. And they are fast. Black marlin may be capable of burst swimming at speeds of over 60 miles per hour. Their predators—apart from each other—include mako sharks, which may reach speeds of more than 35 miles per hour.

The tool of their trade is, as with other billfish, the outrageously elon-

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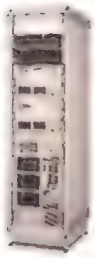

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gated bone of the upper jaw, or "bill." The appendage likely evolved, says Pepperell, as a matter of streamlining and reducing friction. "The bill pierces the water, initiating smooth water flow over the body."

But the marlin also uses its bill to bat or ram its prey. Glassell's fish would have been able to bat around a big dolphin with its four-foot-long bill, as reported of another marlin by S. Kip Farrington in 1937. According to another observer, a marlin secures its prey by "rearing back its bill like a club and dealing it a hearty swipe, then watches its stunned prey as it slows its pace, flies into a flurry to face the marlin's massive jaws where it is swallowed whole."

About one-eighth inch long at 2 weeks of age, a spiny black marlin larva, such as this one from Indonesian waters (shown magnified 35 times), may lengthen 1,500-fold.

Black marlin also use their rapiers to spear their prey, no matter what the size. Zane Grey found a snapper in a marlin's stomach with a hole straight through its body. A Bureau of Commercial Fisheries research vessel discovered a twice-speared 156-pound yellowfin tuna in the stomach of a 1,500-pound black marlin captured south of the Hawaiian Islands.

Since the days of the Greeks and Romans the swords of billfish have caused consternation and fear in humans because of the fishes' reputed proclivity to ram, attack and even sink ships. In an account from 1618 the Dutch explorer Willem Schouten, on a voyage around the world, noted

"But when we let them go, the feeling on board is just wonderful. Fishermen love that big fish."

in the log: ". . . there was such a noyse in the Bough of our Shippe. . . . [The master] looked out over the side of the Ship hee saw the Sea all red . . . knowing not what it meant. . . . " Back in port, Schouten reported, "Wee found a Horne sticking in the Ship, much like for thicknesse . . . a common Elephants tooth. . . . " The "hard Bone" went through three planks and turned upward ". . . to our great good fortune, for if it had entred between the Ribbes, it would happily have made a greater Hole and have brought both Ship and men in danger to be lost."

No one knows how many black marlin thrive in the oceans of the world today. Says Pepperell, "All we know is, as many as 40,000 are taken in the Central and Western Pacific. We don't know if that is sustainable or if the catch is increasing dramatically. The reporting of catches has dropped off because long-liner fishermen are nervous."

The black marlin's range includes the Pacific and Indian oceans and occasionally the South Atlantic. Once the mighty marlin may have even considered New England's Georges Bank as an appropriate place to stop and have a meal, as noted in George Brown Goode's account in the report of the Commissioner of Fish and Fisheries circa 1880. Goode got his information from the interviews of one John H. Thomson of New Bedford, who reported earlier in the 19th century, "Of late years another school has appeared southeast of Cape Cod and George's banks about the 1st of August." Said Thomson, "These fish are altogether different [from the local billfish], being much larger, weighing from 300 to 800 pounds gross, and are entirely black."

Known spawning areas are few—the Great Barrier Reef, perhaps the South China Sea, maybe off the coast of Africa. Despite the many large females caught there, Cabo Blanco, Peru, was never noted as a spawning area, says Pepperell.

Now in the name of conservation, sport fishermen, charter boat captains and biologists are working together to promote tagging black marlin instead of killing them. Says Pepperell, some 30,000 have been tagged with a survival rate of 85 percent. Tagged marlin have now been known to cross 10,000 miles of ocean, notably from Australia to Baja California.

Tagging a black marlin poses somewhat different problems than, say, banding a bird. It's all done by darting. "Also, we have to keep the boat moving so the fish can breath," says Pepperell. "But when we let them go, the feeling on board that boat is just wonderful. Fishermen love and respect that big fish."

In Australia, charter boat captain Dennis "Brazakka" ("Wildman," as he is known to the locals) Wallace, whose clients have included the likes of actor Lee Marvin, says, "We haven't killed a fish in 15 years. When we take game fishermen out we try to encourage them to tag their record black marlin . . . because when that fish leaves the ocean, it leaves a hole in the sea."

JULIAN PEPPERELL

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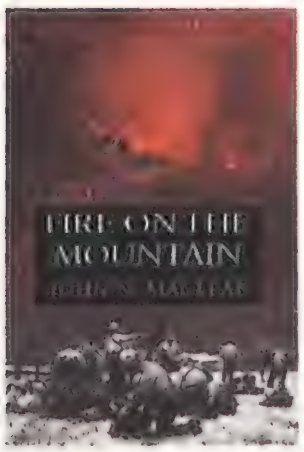
BOOK REVIEWS

Every man and woman who hiked up steep ravines and parachuted onto narrow ridges that day put his or her life on the line.

Fire on the Mountain: The True Story of the South Canyon Fire

John N. Maclean, Morrow, $24



LITTLE SNOW FELL in western Colorado in the winter of 1994. May and June had been bone dry, with temperatures soaring above 100 degrees Fahrenheit—a combination that occurs only every 30 to 40 years, according to John N. Maclean, in his fast-moving, ultimately heartbreaking report of what became known as the South Canyon Fire. He is working in the tradition of his father, Norman Maclean, the author of both *A River Runs Through It* and *Young Men and Fire*, the classic account of another catastrophic blaze, the Mann Gulch forest fire of 1949.

The South Canyon Fire began with a thunderstorm that, on July 2, spiked its way through the Grand Valley of the Colorado River and hurled more than 5,600 lightning strikes against Storm King Mountain in Grand Junction, Colorado.

By the following morning, a resident of South Canyon had reported a "small whiff of smoke" on Storm King to the Bureau of Land Management. The storm's unfinished business had commenced.

One needs a playbill to keep track of the characters in Maclean's book. But the reader quickly understands why the author included so many of them—at least those who actually fought the fire. For every man and woman who hiked up steep ravines and parachuted onto narrow ridges that day put his or her life on the line. Not one among them knew who, if any, would survive what began as a lone burning pine and became what firefighters call a blowup, "a swirling mass of flame and primeval darkness" that "struck with the force of a comet."

In Maclean's account, wind, weather and fire become as real as the characters who struggle against these forces. "Behind them an enormous wave of flame arose," he writes, "and began to sweep the ridgetop, driving the firefighters before it. It swelled to a height of 50, 100 and then 150 feet. It moved faster than any human could run. . . . The flame wave began to break over the ridgetop, transforming the people into surfers riding the curl of a scarlet-orange wave of fire."

Maclean's scenes are transfixing and terrifying: "The hot gases curled in front of his gaping mouth," he writes of one firefighter, "but his screams kept them out of his throat. . . . he caught sight of his hands. The skin hung in shreds." Another survivor was a few yards from safety when "he felt a slap across his arms and shoulders, as though a blowtorch had passed over him. His body arched, elbows drawn back, as heat penetrated his fire shirt and scorched his arms. He heard screams, his own for sure, but others', too."

In the end, ten men and four women died. Maclean's book is a search for answers to all that went wrong during the battle on Storm King Mountain. Some of his questions are answered; some answers may never be found.

Today granite crosses stand where firefighters fell. Storm King Mountain has become a pilgrimage for family, friends, the curious and the caring. But perhaps the finest monument is Maclean's book, which dramatically records the uncompromising power of fire and the extraordinary bravery of the men and women who do battle against it.

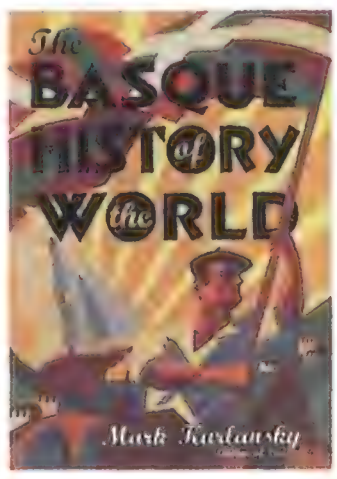
Emily d'Aulaire is a reviewer who is based in Connecticut.

The Basque History of the World

Mark Kurlansky

Walker & Company, $25

IF YOU SEE A BASQUE, SO THE STORY goes, standing on a clifftop or leaning on a tree by the roadside, and some hours later you find him in the same place and position and ask what he is doing, he is apt to give, in French or Spanish or one of seven varieties of Euskera, the Basque language, the simple answer, "I am staying."



He is not just whistling Dixie. The Basques, in their taciturn, ornery way, have shown an astonishing staying power. Whether or not they are, as they believe, the direct descendants of the Cro-Magnon hunter-artists of the Magdalenian period 20,000 years ago, there is no doubt that they have been staying in their Pyrenean valleys at the corner of the Bay of Biscay for thousands of years. They have preserved unique prehistoric blood groups and a

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The title of Mark Kurlansky's book is only marginally ironical. *The Basque History of the World* does allow players like Charlemagne, Napoleon, Karl Marx and Francisco Franco to flit across the stage, but only when they are doing something (generally bad) for the Basques.

It is not as if they have lived in remote desert wastes. Their mountain gorges lie at a strategic crossroads between great rich plains, constituting handy invasion routes since the beginning of history. Armies of the Romans and Visigoths, Arabs and Franks, Spaniards, French and English have pillaged and departed, while the Basques—peasants and shepherds and fishermen—have stayed.

Through it all they have never formed an independent country; they never even had a name for their country until a late-19th-century visionary poet-agitator coined one—Euzkadi, meaning "Euskera-speakers united." They have never been united in peace; in the civil wars that have torn Spain apart in the past two centuries, Basque has fought against Basque.

The Basques have left their marks on the outside world. They invented the beret, and the game of pelota (jai alai). They helped invent what is now the resort industry, when they lured the idle rich of Paris and Madrid to the seaside villages of Biarritz in France and San Sebastian in Spain. And it was brisk Basque entrepreneurs and bankers who turned their port of Bilbao into a steelmaking and shipbuilding industrial powerhouse.

Through thick and thin, they have clung to their identity and old ways, all documented in Kurlansky's book: the pre-Christian rites, midsummer bonfires, goat races and dances and spider-crab stews. Before the word had become fashionable, they resisted. Sometimes it was violent, as when, in A.D. 778, wild Basque mountaineers, resenting the presence of a foreign army in the pass of Roncesvalles (it was the rearguard of Charlemagne's army, retreating from an unsuccessful effort to drive the Arabs out of Spain), rolled rocks down on the invaders. The casualties included the rearguard commander, one nobleman named Roland. This episode was recorded by Charlemagne's friend and biographer Eginhard; by the time the monks at the monastery of Roncesvalles had gotten through with the story, it had turned into a 12,000-line poem, the *Chanson de Roland*.

But the more the Basques indulge their devotion to the past, the more they are being absorbed inexorably into the modern world.

A SMALL PEOPLE WHO NUMBER no more than 2.4 million, fewer than half of whom speak the official Basque language, they had little chance of maintaining an independent existence in the face of France and Spain. The boundary between those two countries was fixed 300 years ago on the crest of the Pyrenees; the Basques have always lived on both sides of the mountains.

They learned early on that a reliable source of income could come from smuggling goods over an international border, which for them has never been more than a line on the map. At times the goods were human: in World War II, they smuggled thousands of resistance fighters, Jews and British intelligence agents over the mountains from occupied France into Spain. After World War II, they smuggled Nazis and collaborators out of liberated France into Spain. But year in and year out, they smuggled any kind of goods on which duty was supposed to be paid.

After half a century of turmoil—bloody civil war, brutal repression under General Franco, a long campaign of bombings, murders and kidnappings by intransigent fighters for Basque independence—the ancient land has been slipping into an era of peace and prosperity. The three Spanish provinces of Vizcaya, Guipúzcoa and Alava have been formed into a Basque Autonomous Community, with considerable powers over local matters like education. Euskera, which Basques were forbidden to speak under Franco, is taught in schools; road signs are full of incomprehensible words full of *x*'s and *z*'s.

But the more the Basques indulge their sentimental devotion to the past, the more they are being absorbed inexorably into the modern world. The younger generation is more interested in the jobs they can get in the new high-tech factories. And the Bilbao skyline is no longer dominated by steel mills but by the Bilbao Guggenheim Museum, lured here at a cost of $56 to every citizen of the Basque Autonomous Community.

There are no more smugglers because there is no more frontier; Spain and France are members of the European Union. Jeannine Pereuil, who runs a pastry shop specializing in *gâteau basque* in the village of St. Pée-sur-Nivelle, on the French side, finds life distinctly less interesting than it was in the old days. "You used to hide a little bottle of Pernod in your clothes and nervously smile at the customs officials. Now, it's not any fun at all to go across."

But fun or no fun, she is going to stay in St. Pée-sur-Nivelle.

Robert Wernick is a frequent contributor to SMITHSONIAN.

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SALVADOR DALI, HE OF THE SLENDER MUSTACHE and oozing timepieces, was a popularizer of Surrealism. But Dalí was also a master of the optical effect. His art is being studied afresh as a product of the artist's intellect: his comprehensive understanding of physics, math and the natural world. "Dalí's Optical Illusions" opens April 19 and runs for a brief two months at the Hirshhorn Museum and Sculpture Garden.

SMITHSONIAN HIGHLIGHTS

The exhibition includes *Ascension* (1958), above. By painting a model posed on a glass floor that he had installed in his studio, Dalí achieves a strangely foreshortened body for the Christ figure. Dalí toys, too, with Christian symbolism; his wife, Gala, is the Virgin Mary, and he reverses the traditional placement of the figures, with Mary at the top of the composition and Christ seeming to fall even as he ascends. *—Beth Py-Lieberman*

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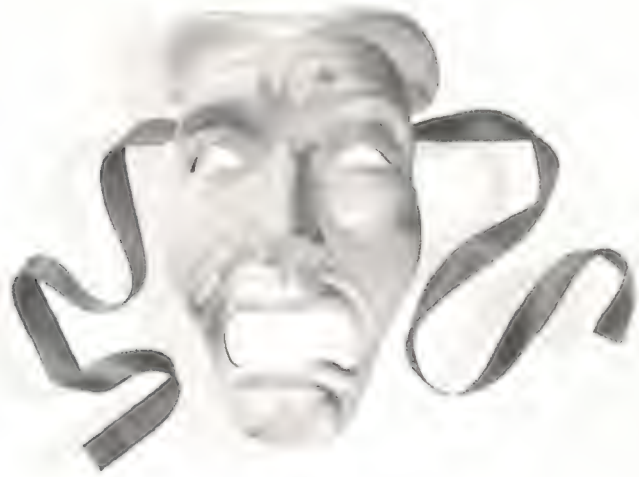

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SMITHSONIAN HIGHLIGHTS

Behind the Scenes: The Smithsonian Castle

MEMBERS' TOURS AVAILABLE

Louise Steele is not one to boast. But from her 30-year career here as a volunteer and as a member of the Castle Docent Corps, Steele sure knows a lot about the Smithsonian. On Sunday mornings beginning at 9:45, Steele and the other docents lead tours through the nonpublic areas of one of the most interesting buildings in the entire Smithsonian complex, the Castle. Built in 1855, in a 12th-century style combining late Romanesque and early Gothic motifs, the Castle has a long history. It was home to the first Smithsonian Secretary, Joseph Henry, and his family, and it welcomed some of the world's royalty during the nation's bicentennial-year celebrations. Though European in appearance, the Smithsonian's Castle building, with offices for scientists, scholars and the Secretary, is uniquely American in purpose. Steele remembers well the time when the eighth Secretary, S. Dillon Ripley, an ornithologist, tried to entice a family of barn owls to live in one of the towers. In her tour, she'll show you where Smithsonian personnel took carrion up to the two owls, appropriately named Increase and Diffusion (of knowledge, of course) and tell you about the day she herself climbed up the ladder to the tower to get a look at the pair and their new babies. "I came up over the floor level, and the mother had her wings spread and her head thrust forward in a menacing way," she remembers. "Sure, the babies were cute," she says, but Steele made a quick retreat—out of deference to the mother. Reservations for the Sunday-morning members' tours must be made in person, up to two weeks in advance, at the Associates' Reception Desk in the Smithsonian Information Center located in the Castle. No phone or mail-in registration is available. If you meet Louise Steele, ask her to tell you about the Castle's ghost; in life, he was the nation's first paleontologist.

The barn owls Increase and Diffusion once inhabited a Castle tower.

Richard Cooke plays his xylophone with rearrangeable keys, in an image on view in the Georgia SITES show.

SMITHSONIAN Website

WWW.SMITHSONIANMAG.SI.EDU

Visit the Magazine's homepage and click on "Events" to go to the calendar, which is designed so that visitors can view on-line versions of Smithsonian exhibitions, as well as the Websites of all the museums. This month, on-line visitors can view a selection of images from "Heart & Hands: Musical Instrument Makers of America," from the Smithsonian Institution Traveling Exhibition Service (SITES). The show opens April 8 at the Georgia Mountains History Museum in Gainesville, Georgia, and features images of instrument-making artisans by photographer Jake Jacobson.

Exhibitions and Events

FRIENDS OF MUSIC

The 28th Musical Weekend in Washington (April 28-30) Enjoy a concert in the Hall of Musical Instruments (NMAH) performed by the Smithsonian Chamber Music Society on rare instruments from the collections, along with fine dining, a theatrical performance, behind-the-scenes tours, luxurious accommodations and more. For details and reservations, call 202-357-4174.

NATIONAL MUSEUM OF AFRICAN ART

A Concrete Vision: Oshogbo Art in the 1960s (through October 22) Works by 11 artists in a major 1960s renaissance that developed in the western Nigerian town of Oshogbo.

The Artistry of African Currency (through July 23) Objects used to facilitate trade and measure wealth, including copper and iron implements, wands, bracelets and anklets.

INTERNATIONAL GALLERY S. DILLON RIPLEY CENTER

PIANO 300: Celebrating Three Centuries of People and Pianos (through March 4, 2001) Features a variety of piano designs, dating back to c. 1700.

TOP: JAKE JACOBSON; BOTTOM: SMITHSONIAN INSTITUTION; P.41 SHINICHI YOKOYAMA

ARTS AND INDUSTRIES BUILDING

Ritmos de Identidad: Fernando Ortiz's Legacy & the Howard Family Collection of Percussion Instruments (through August 1) A bilingual exhibition, featuring 150 unique drums and percussion instruments, that highlights the preservation and transformation of African musical traditions in the Caribbean, Latin America and the United States.

Reflections in Black: A History of Black Photographers, 1840 to the Present (through June 30) Showcases more than 300 images.

NATIONAL MUSEUM OF AMERICAN HISTORY

Fast Attacks and Boomers: Submarines in the Cold War (April 12 through 2003) Learn about submarines, through graphics, artifacts and interactives, as well as the role of Navy families in supporting men and women at sea.

Lighting Revolution 2 A new gallery in the Electricity Hall updates the story of electric lighting into the modern era.

NATIONAL MUSEUM OF NATURAL HISTORY

Vikings: The North Atlantic Saga (April 29 through September 4) In commemoration of the 1,000-year anniversary of the Vikings' arrival in North America, the

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exhibition explores new archaeological finds that redefine the period.
African Voices Examines the diversity, dynamism and global influence of Africa's peoples.

NATIONAL AIR AND SPACE MUSEUM

Looping the Loop: Posters of Early Flight (April 29 through July 9) Features 32 European posters on themes of early flight from the Allen Airways Flying Museum in El Cajon, California.
R. G. Smith: The "Old Master" of the Sky (through September 4) Among the artists who have recorded the history of flight on canvas, Robert Grant "R. G." Smith is regarded by many as the American master. Twenty-five works are on view.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Dalí's Optical Illusions (page 38) For free tickets, call 202-786-2122.
Robert Gober: Sculpture and Drawing (through April 23) Gober's altered images of sinks, drains, chairs and twigs explore themes of childhood, memory, loss and sexuality.

NATIONAL POSTAL MUSEUM

Missing You: Last Letters from World War II (through April 30) Letters sent home before the writers were killed in action.

RENWICK GALLERY, NATIONAL MUSEUM OF AMERICAN ART

The Art of John Cederquist: Reality of Illusion (through August 20) Features 14 playful, multidimensional works from this California craftsman.
The Renwick Invitational: Five Women in Craft (through August 20) Exhibiton features works by a ceramist, a fiber artist, a basket maker, a jewelry designer and a metalsmith.

ARTHUR M. SACKLER GALLERY

Music in the Age of Confucius (April 30 through September 17) The earliest and most extensive surviving group of musical instruments in the ancient world, on view for the first time outside the People's Republic of China.
Antoin Sevruguin and the Persian Image (through May 28) Sevruguin's evocative photographs record Iran's culture.
Imaging the Word: Selections of Calligraphy from the Islamic World (through May 7) Some 30 works from the museum's collection that show the range and variety of calligraphic styles.

Corn Blue Room (detail above) is on view at the Heye Center, NMAI, in New York City.

FREER GALLERY OF ART

Later Chinese Calligraphy from the Robert H. Ellsworth Collection (April 30 through January 2, 2001) This exhibition presents a selection of recently donated late Chinese calligraphy and includes a history of Chinese writing.
The Dragon's Moan (through October 1) Works celebrating the *qin*, or zither.

GEORGE GUSTAV HEYE CENTER, NATIONAL MUSEUM OF THE AMERICAN INDIAN [NEW YORK CITY]

Reservation X: The Power of Place (April 9 through August 20) Seven multimedia art installations by artists from Canada and the United States explore the interaction of mainstream society with native community life, including a work by Jolene Rickard, a Tuscarora Indian. In *Corn Blue Room* (detail at left), Rickard uses photographs and an interactive CD-ROM to tell the story of how a hydroelectric project has consumed a third of her community's land.

SMITHSONIAN CRAFT SHOW

The nation's premier juried exhibition and sale is April 27-30 at the National Building Museum.

ART MUSEUMS AND ANACOSTIA MUSEUM GALLERY CLOSED

The National Museum of American Art and the National Portrait Gallery will remain closed for the next three years. The Anacostia Museum Gallery will reopen in the spring of 2001.

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BEIRUT RISES

FROM THE ASHES

BY RICHARD COVINGTON ■ PHOTOGRAPHS BY ROBERT WALLIS

AFTER SURVIVING A 15-YEAR CIVIL WAR, THE CITY IS ONCE AGAIN A MECCA FOR ARTISTS AND ENTREPRENEURS, A LANDSCAPE COVERED WITH STUNNING ARCHITECTURE AND AN ARCHAEOLOGICAL WONDERLAND OF NEW DISCOVERIES

IT IS 3 O'CLOCK IN THE MORNING AND CARS ARE STREAMING DOWNHILL toward Beirut, the last of the revelers heading home after dinner and dancing in Mount Lebanon's resort-restaurants. Not quite the last. A couple of friends have shanghaied me into accompanying them on what sounds suspiciously like a New Age ritual to greet the dawn from a spot overlooking the city.

At the entrance to a 19th-century pastiche of a Crusader-Tudor castle, we are greeted with roses wrapped in silver gossamer, 168-page bound programs printed especially for the occasion, and glasses of champagne. I had expected maybe nine or ten other guests to be up at this hour. Instead, some 300 Beirutis, a mix of the city's well-heeled, artistic, insomniac society, are milling about, wondering what's next.

We file past torches down the hillside to a Roman-style amphitheater that the host, interior designer Jean-Louis Mainguy, has installed for private concerts. As the audience settles into oversize cushions, a full orchestra and chorus take the stage, launching into Carl Orff's *Carmina Burana*. As the piece reaches its climax, the sun rises over the hill villages across the valley, and the tree frogs and birds chime in raucously. Miraculously for Beirut's phone-obsessed citizens, not a single cell phone rings.

The designer's biannual concert and dawn breakfast feast began 20 years ago, as his over-the-top way of claiming a reprieve from the horrors of a civil war that had raged since 1975. When the fighting ended in the early '90s, the celebration continued.

"We Lebanese have always had a desperate need to come out on top," says Mainguy as he bids his guests good-bye. "Our phoenix never rose from the ashes; it never died to begin with."

In this city that is alternately triumphant and tragic, Mainguy's bash is only one of the more glittering examples of the Beiruti penchant for raising paradox to an art form. The evidence is inescapable. A pair of young women walk in the street: one, covered head to toe in black *hejab*, chatting on her cell phone, the other, in a miniskirt, concentrating on avoiding the traffic. With what may be the largest number of Internet subscribers in the Arab world, the capital

Fun-loving Beirutis enjoy a dinner party (above) at the home of a wealthy businessman who benefits from the postwar economy. There are still many areas in Beirut that await redevelopment after war damage (left).

city has Internet cafés popping up everywhere, but usable sidewalks are in short supply. In a sports stadium where Israeli jets once bombed Palestinians, Luciano Pavarotti recently performed for 17,000 fans from all over the Middle East.

On Sodeco Square, with its antiques shops and jazz clubs, a gleaming high-rise office tower casts a long shadow over a pockmarked shell of a building, with shrubs pushing up through bomb craters. Nearby, a row of tanks are arrayed in reserve to keep the peace. Such displays of firepower notwithstanding, "Beirut is a safe city," says John Waterbury, president of the American University of Beirut (AUB). Waterbury is the first AUB president to live in Beirut since the assassination of former president Malcolm Kerr in 1984 at the height of the civil war.

In spite of the overall return of peace to the city, Beirut recently suffered from the Israeli bombing of nearby civilian power plants in retaliation for the killing by Islamic militants of Israeli soldiers in occupied southern Lebanon, 50 miles south of Beirut. The February bombings were criticized by the U.S. Department of State as a breach of a 1996 agreement not to attack civilian targets in Lebanon. Although Israeli bombing caused power shortages in half the country and prompted angry demonstrations, there is virtually no risk of any resumption of fighting in Beirut.

Today, Beirut is arguably the most modern and vibrant capital of the Arab world, with an unsinkable entrepreneurial spirit and a near-palpable fever for urban renewal.

The Beirut Central District, or downtown, a no-man's-land of bombed-out buildings after the civil war, is now being touted as the largest redevelopment project in the world. Archaeological sites unearthed during construction have brought to light 5,000 years of Beirut's past, creating a wealth of antiquity to rival that of Rome or Athens. For a city with some 1.5 million inhabitants in its greater metropolitan area, it boasts a cultural life American cities twice its size would envy. Despite, or perhaps because of, the war, Beirut is bursting with filmmakers and musicians, poets, writers, playwrights, artists, and dance and theater groups.

A number of Beirut stars, like the singer Fairouz, have an international following. The ballet troupe Caracalla performs in Carnegie Hall, the Kennedy Center and other

A panoramic view shows downtown Beirut in the midst of what is touted as the largest redevelopment project in the world. Inset: Wissam Ezzeddine poses before a recently restored building that his grandfather first constructed some 70 years ago.

concert halls around the world. Jazz composers like Marcel Khalifé blend Arab and Western influences, attracting audiences from Rio to Boston.

During the summer, music festivals at Baalbeck, Beiteddine, Deir al-Qamar and other sites surrounding Beirut bring appearances by such performers as the Kirov Opera, the British company of the dance-percussion show *Stomp*, American soprano June Anderson and Placido Domingo.

Hemmed in by Israel to the south and Syria to the north and east, Lebanon has been occupied by just about every invader who ever sailed the Mediterranean. Examining a model of the archaeological trail planned for downtown Beirut, I counted 13 different epochs layered one on top of the other, from Bronze Age Canaanite settlements to Phoenician, Persian, Hellenistic, Roman, Byzantine, Umayyad, Abbasid, Crusader, Fatimid, Mamluk, Ottoman and French Mandate. And then, of course, there is the architecture built after Lebanon gained its independence in 1943.

Before the suicidal civil war began in 1975, Beirut was a wildly successful experiment in hard-won tolerance and freewheeling investment. Its banks, port and beaches were among the busiest in the Middle East, with businessmen and tourists flocking to the city to drink in the freedom. In the electric, eclectic downtown, a mix of graceful Ottoman and French Mandate buildings jostled the bustling souk quarter shops, where merchants sold everything from Damascus silver to Arabian jewelry and Egyptian cotton. Writers, artists and intellectuals from all over the Arab world descended on the city to take advantage of the country's lack of censorship, and fashioned a nascent literary movement that experimented with surrealism, existentialism and other avant-garde trends.

Beneath the cosmopolitan glamour, however, seethed ethnic and religious tensions. With the creation of Israel in 1948, thousands of Palestinian refugees flooded into neighboring Lebanon. Following decades of conflict between Lebanese Muslims and Christians over a host of social and religious tensions, exacerbated by a growing Palestinian presence, civil war erupted in earnest in 1975. Beirut, formerly a haven of secular tolerance, soon became synonymous with terrorism and anarchy.

Straddling the infamous Green Line—a bloody border that separated Christian East Beirut from Muslim West Beirut—the downtown became a war zone. Snipers took up positions inside the banks, apartment buildings and souks as bombs and machine-gun fire riddled the proud facades with gaping holes.

Israeli troops invaded and occupied Beirut in 1982, and stood by as right-wing Christian militiamen, armed and financed by Israel, massacred some 800 unarmed Palestin-

ian men, women and children inside Sabra and Shatila refugee camps on the outskirts of the city. A multinational force, including U.S. troops, was called in to restore a tenuous cease-fire, but was ordered to withdraw after a retaliatory attack by suicide bombers killed 299 soldiers.

In the mid '80s, Islamic extremists took Western journalists and aid workers hostage, demanding the release of Palestinians held in Israeli jails. At the end of a series of prisoner exchanges, the last of the hostages were released in June 1992, nearly two years after the civil war had "officially" ended in October 1990 with Syrian occupation. After a war that claimed more than 150,000 victims and exacted tens of billions of dollars in widespread damage, the city plunged into the business of rebuilding itself.

Wissam Ezzeddine, an imposing gentleman with a corona of white hair and a permanent look of bemusement, is the 70-year-old founder of the country's first television station and a born salesman. He has brought me downtown to view the nearly completed restoration of a once-derelict, war-damaged building constructed by his grandfather more than 70 years before. The view from the Ezzeddine building takes in a new glass United Nations building and a landfill destined to become a business complex and marina. The same panorama also opens out to a nostalgic chunk of Ezzeddine's past.

He grew up in a house, leveled during the war, with balconies overlooking the sea. At night, the preteen boy would sneak out with binoculars to peer at dancing girls performing in an open-air cabaret nearby. At age 28, he became a millionaire importing jukeboxes, and kept them spinning by financing Arab pop singers recording on newfangled 45 rpm platters. Ezzeddine is not one of those Miltonian Beirutis who picture the prewar capital as paradise lost. But he does recall downtown as a model of toleration, a place where all sects mingled without friction. "During the war, the Central District became a jungle," Ezzeddine explains in flawless English, raising his voice to be heard above the rapid staccato noise of jackhammers. "There were snakes, animals, people living in shambles." The restoration of his grandfather's building, he says, is an act of faith.

"This part of town has a fantastic future," he declares. Gesturing to a vacant plot of land nearby, Ezzeddine confides his family's latest investment scheme. "We're hoping to install an attached hot-air balloon that will float 150 meters above, and charge people for rides," he says with a conspiratorial smile. "It'll be just like the one in Paris, but with a view of the sea, it's bound to be better."

The granddaddy of Beirut's postwar schemes is the controversial plan by Solidere, the private corporation in charge of urban renewal, to rebuild almost 445 acres of the downtown area. Despite a slew of lawsuits by some former property owners outraged that their buildings were ultimately razed to make way for developers' projects, Solidere has won plaudits for its meticulously detailed restorations, particularly of the yellow sandstone French Mandate buildings in the Foch-Allenby District, a quarter that has been reconstructed down to the original cobblestones. After years of being written off as a dead zone, the area is one the company is desperate to revive.

One mercifully balmy evening in the quarter, I join several hundred Beiruti families gathered to watch a boisterous street circus and a parade of floats marking the historical march of the city's sundry civilizations. It is part of a yearlong series of events sponsored, in 1999, by the Unit-

Atlantis, a trendy new club in East Beirut near the Green Line, features an aquarium filled with piranhas. Inset: Photographers Joana Hadjithomas and Khalil Joreige show their images that vividly confront the effects of war on Beirut.

ed Nations Educational, Scientific and Cultural Organization (UNESCO) and the Lebanese Ministry of Culture to fête Beirut as the cultural capital of the Arab world.

A flamboyantly garbed Alexander the Great sits astride an elephant as the pair sways past 19th-century lanterns and buildings. Nearby, trapeze artists perform on high wires strung between the buildings as antiques dealers lay out elaborate water pipes, rugs and other wares. All that's missing is a Lebanese Fellini to film the surreal spectacle.

Leaving the trapeze artists, hot dog stands and the Great Alex behind, I make my way to the outdoor Roman baths for a solo piano concert by the Lebanese-American virtuoso Waleed Howrani. It is a stunning setting under warm starry skies, a slice of downtown that takes in the baths and terraced gardens overshadowed by the floodlit Grand Serail, a former barracks renovated as the Lebanese prime minister's offices. Suddenly, a muezzin's amplified call to prayer rasps from a nearby mosque to do battle with Howrani's Chopin polonaise. Eventually, the wavering chant ends as the pianist thunders on.

Everywhere I go downtown, I encounter the clash of cultures, eras and priorities. Despite investing some $8 million in 130 separate archaeological digs, Solidere has come under fire for destroying Bronze Age and Crusader walls, a Roman forum and other sites to make way for roads, bridges, underground power and sewage lines. Sorting through what to keep from the excavations has been a diplomatic thicket presided over by a team of experts drawn from several countries under the aegis of UNESCO.

It didn't help Solidere's credibility that former prime minister Rafik Hariri, a billionaire property developer, pumped some $125 million of his own money into the private project while still in office, making him the company's principal investor and a target for critics who pointed it out as a conflict of interest.

As devastating as the war was to downtown Beirut, it proved a boon to the city's extravagant wealth of archaeological remains, says American University of Beirut archaeologist Leila Badre, from her office overlooking the university's giant banyan trees. "Due to the series of excavations after the war, we now know the continuous history of Beirut from the third millennium B.C. to the present," Badre explains. "Before, there were many gaps. For instance, we had no evidence that Beirut even existed in the Phoenician period." Canaanite jars and burial urns, Bronze Age walls and Phoenician lamps, sculptures of Hel-

Along the Corniche, Beirut's seaside promenade, conservatively dressed Muslim women watch a jeans-clad skater. Inset: A Palestinian refugee proudly holds his daughter in the camp where their family lives.

lenistic deities, delicate faience cups from the Mamluk period and remains of Ottoman silk workshops have all emerged in the past seven years of systematic excavations. Beirut's archaeological legacy now ranks with those of Rome, Athens and other cities of the ancient world, according to Badre.

The AUB archaeologist and her team uncovered the oldest finds, unearthing the archaic tell that contained remains of the Bronze Age Canaanite city and the later Iron Age Phoenician city that had been buried beneath what had been a humble vegetable market before the war. In a rare stroke of luck, Badre discovered enough of the city wall to determine that the size of the Canaanite settlement encompassed five acres, sprawling from the present-day Martyrs' Square to the sea.

Other archaeologists excavated the ancient souk site, revealing a Phoenician-Persian settlement dating from the fifth century B.C., a Roman mansion and Byzantine shops. Among the most significant breakthroughs was the discovery that the original layout of the city streets dated back two centuries earlier than previously believed, to Hellenistic architects of the third century B.C. "For the first time, we can now see what parts of the ancient urban plan survived into modern times," explains Helga Seeden, the AUB archaeologist in charge of the souk excavations.

One day, at dusk, as Seeden and I view a nearby site, the German-born scholar reflects on the leisurely lot of being an urban archaeologist in Beirut. "It was a total madhouse," she says, wincing at the memory. "Normally I excavate a site for two months, then spend another nine months working up the results. Here we excavated for three years nonstop. I almost died from the stress."

Unfolding before the two of us like an operatic backdrop stage lit by the setting sun stretches a three-dimensional jigsaw puzzle of extinguished civilizations. A trio of Roman columns rises above a patchwork of Ottoman walls with pointed arches, paths dating from the Iron Age and toppled Byzantine porticoes. The site is surrounded by centuries-old churches, a mosque, the former Grand Theater and the Ottoman-era town hall—all in various stages of reconstruction.

Plans for a new museum call for a multistory orientation tower with a panoramic view of the ruins, and an underground gallery with transparent partitions allowing visitors to inspect ancient fortification walls. Sophisticated computer-graphic displays will re-create the chronological

eras alongside cases filled with artifacts. Outside, visitors will follow a signposted archaeological trail winding past 5,000 years of historical remains and themed gardens.

"Eventually, this will be the best-known city of antiquity in the world," Seeden predicts confidently. "But I'm worried. For now, both the archaeological museum and trail project are on hold and the exposed ruins are at risk of deteriorating."

Despite the antiques shops, children's museum, marine museum and restaurants springing up downtown, the joint will only start jumping when the new souks open. A chaotic warren of small boutiques, cloth, gold and jewelry merchants, artisanal workshops and cafés, the prewar souks were the heart of downtown. Spanish architect Rafael Moneo, who has designed the new souks to incorporate portions of the ancient souk, decided that attempting to re-create the quarter's charming chaos would be futile.

"Maybe the new souks won't be the hodgepodge of old, but they won't be overly planned either, and should be just as lively as the old souks," explains Hashim Sarkis, an architect working with Moneo on the site, as we gaze out over a vast concrete plaza awaiting construction. Sarkis, a 35-year-old Beirut native who spends the academic year as an assistant professor at Harvard University's Graduate School of Design, has a fond respect for the quarter's distinctive, often romanticized prewar character. But the architect sees a grave danger in slavishly trying to mimic past designs. "It's catharsis through architecture," he warns, "as if Beirutis were re-creating a style to redeem them from the fact that they destroyed downtown."

A world away, in the impeccably groomed garden of the president's residence at the American University of Beirut, John Waterbury, a renowned Middle East scholar, views Beirut as a Western-style oasis in the Arab world. "Beirut is still cosmopolitan and very tolerant," he volunteers. "The sexes mix pretty easily. When people see provocative behavior, they don't chalk it up to the collapse of morals. When I arrived in 1998, I was fairly surprised.

"If you go to Egypt or anywhere else in the Arab world, the influence of conservative Islam is very strong," Waterbury continues. "Egyptian women do not dress as freely as they did 20 years ago, nor do North African women. But out on the Corniche here [the city's seafront promenade], people are dressed either conservatively Islamic or outrageously European and no one seems to mind."

Descending the hill from AUB after our interview, I decide to see for myself. It's not provocative behavior that raises my eyebrows on the Corniche, but rampant overbuilding, a stark contrast to Solidere's exhaustively planned downtown district two miles away. Hotels, high-rise apartments and the rare open space throw up an architectural mishmash. Instead of beaches, the rocky shoreline has been largely carved up into private swimming clubs with chlorinated pools built on concrete jetties. Waterbury's words echo in my head. "Eventually, the construction will create a solid wall between the city and the sea," he complained. "It's absolutely atrocious."

Along the Corniche's broad pedestrian walkway, teenagers on Rollerblades zigzag around unflappable ven-

The restored National Museum of Beirut that was looted and damaged in the civil war reopened in October 1999.

dors on bicycle carts hawking roast corn and sesame pocket bread dangling from metal racks. Skimpily clad joggers pant past women wrapped in hejabs. Nonchalantly crossing their polished Italian loafers, businessmen taking a break stretch out in folding chairs and take languorous puffs from tall water pipes, an old Arab custom making a rousing comeback. Boys dive off rocks slick with algae as fishermen cast their lines into the blue-green sea roiling with foam. These fishermen must be optimists. According to a report by the local chapter of Greenpeace, most marine life close to Beirut has disappeared.

From Greenpeace offices overlooking the city's lone strand of public beach, Zeina al-Hajj, the chapter's 25-year-old campaign director, watches bathers splashing around pipes spewing untreated sewage into the water.

"We warn people not to go swimming there, but they don't pay any attention," she frets. Persuading Beirutis to protect their environment is about as easy as convincing them to give up their cars. With one car per every three residents, Lebanon has among the highest automobile densities in the world; 60 percent of the vehicles are in Greater Beirut. Inspection is unheard of, and noxious exhaust fumes periodically cast a gray-brown pall over the skyline.

Undeterred by their Sisyphean task, the 2,000 members of the local Greenpeace chapter, along with a handful of other environmental organizations, have scored a number of landmark victories, cleaning up toxic waste sites and lobbying against rampant industrial pollution. "But it will take a very long time, at least 10 to 15 years, to clean up the coast," al-Hajj reflects glumly.

Despite the pollution and overbuilding, the city's creative community is on a roll. "Every day, I have performers and directors coming to me to help produce their projects," says Jean-Claude Voisin, the voluble dynamo in charge of the French Cultural Center. Sitting in the center's café, a shady oasis across from the Lebanese University, Voisin ticks off the Bach concerts, plays and art exhibitions he's staged across the country. "Only a few months ago, we put on a play based on the poetry of Jacques Prévert that took two years of research and preparation. It was absolutely superb," crows Voisin. "Four years ago, it would've been unthinkable."

Inevitably, the city's artists open up old wounds. In the Tribeca Café, a trendy, wood-paneled slice of New York, Joana Hadjithomas and Khalil Joreige, photographer-filmmakers in their early 30s, recount how their first exhibition, a confrontational display of bombed-out buildings and scarred victims, went over in Beirut.

"People said, 'Stop dredging up the war, we're fed up with remembering it,'" explains Hadjithomas. "Now

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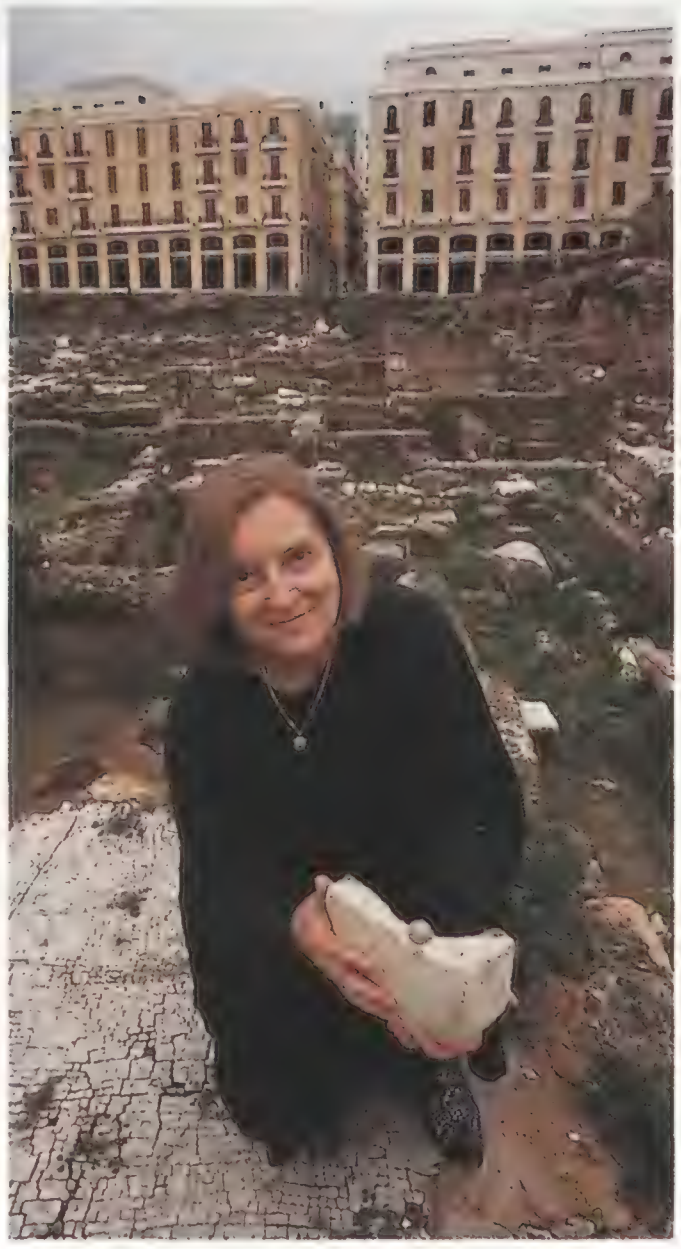
there's an attitude that spending money and developing a facade of wealth will cure our persistent postwar bitterness. But beneath the facade, the wounds have still not healed."

"Some people are even saying life was better during the war," Joreige interjects, shaking his head. "They say relationships were stronger, there was more intensity during the war."

While some like Hadjithomas and Joreige continue to grapple with war's aftermath, other artists are eager to lay the war to rest. "During the war, local audiences came to us to escape into a fantasy world and they still do," explains choreographer Abdul-Halim Caracalla, as he takes a break from rehearsals in his East Beirut studio. Trained in London at the Martha Graham Center of Contemporary Dance, Caracalla gives a flamboyantly Arabic twist to Shakespeare's *A Midsummer Night's Dream* and other epic spectacles. For nearly three decades the ebullient choreographer has been searching out rapidly vanishing traditional Arab music and dance, and recording them for the company's extensive archives of audio and video tapes.

Across town, another repository of Lebanese heritage and an indelible symbol of Beirut's comeback reopened in October 1999, after being closed for most of the past 23 years. The sand-colored National Museum of Beirut once again welcomes the public to view its unparalleled collection of works from Baalbeck, Sidon and Byblos dating back to the Bronze Age.

Unluckily situated on the murderous Green Line, the museum was commandeered as a munitions depot during the war, devastated and looted. While most of the museum's smaller works were removed to the vault of the country's central bank for safekeeping, sarcophagi, statues and other large pieces were encased in protective concrete shells. Restoration proved a monumental task. "Not only was the interior a wreck, but we also had to renew the sense of the museum as a holy place," points out curator Suzy Hakimian as she gives me a preview tour of the work in progress. Laboring under strict budgetary constraints, museum curators have pulled off a Herculean feat.



Archaeologists like Helga Seeden excavate sites that abut redevelopment areas.

Shiny glass cases display Bronze Age gold hatchets with their intricately incised figures of sacrificial animals; slender bronze deities sporting whimsical conical hats; a fragile terra-cotta bull's head, wondrously intact after more than four millennia; and 13th-century Mamluk necklaces spun out of ornate gold filigree.

The war may be long over in Lebanon, but peace has yet to take root. "Even though the violence is gone, there's a lot of pent-up hostility," worries Samir Khalaf, head of the Center for Behavioral Research at AUB and an old hand at analyzing his fellow Lebanese. "You can see it in the way we drive, the noise, the way we brutalize the environment, even the way we scream into cell phones, ignoring other people around us."

After spending nearly a decade at Princeton University, Khalaf and his family returned in 1995 to pitch in on the city's rebirth. "My own belief is that culture, music and art—more than politics and the marketplace—will be what allows the Lebanese to heal," the sociologist reflects.

"The barriers between the different sects are not physical walls; they're psychological. But this is changing. You see liberalized Muslims crossing over into Christian East Beirut to go to the restaurants, clubs and discos on Rue Monot, Christian-run places that play more and more Arab music to attract Arab customers. But the question is, is this enough to build a nation?"

That indeed is the ineluctable, intractable question.

Despite the chaotic building and mind-numbing stress of daily life, Lebanese society is, as film director Randa Sabbag points out, very joyous: witness the easygoing mix of citizenry up till all hours along the Corniche, the performing arts festivals, Jean-Louis Mainguy's sunrise concert. "Nothing is given to you here except your nationality," says Sabbag. "You have to fight for everything else. But people fight in happiness." In the long litany of Lebanese paradoxes, this sounds suspiciously like hope.

Richard Covington lives in Paris and last wrote on the Basilica of St. Francis in Assisi (November 1999). London-based Robert Wallis photographed the November 1998 article on the Bosporus.

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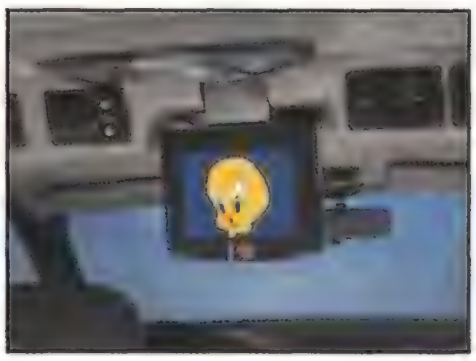

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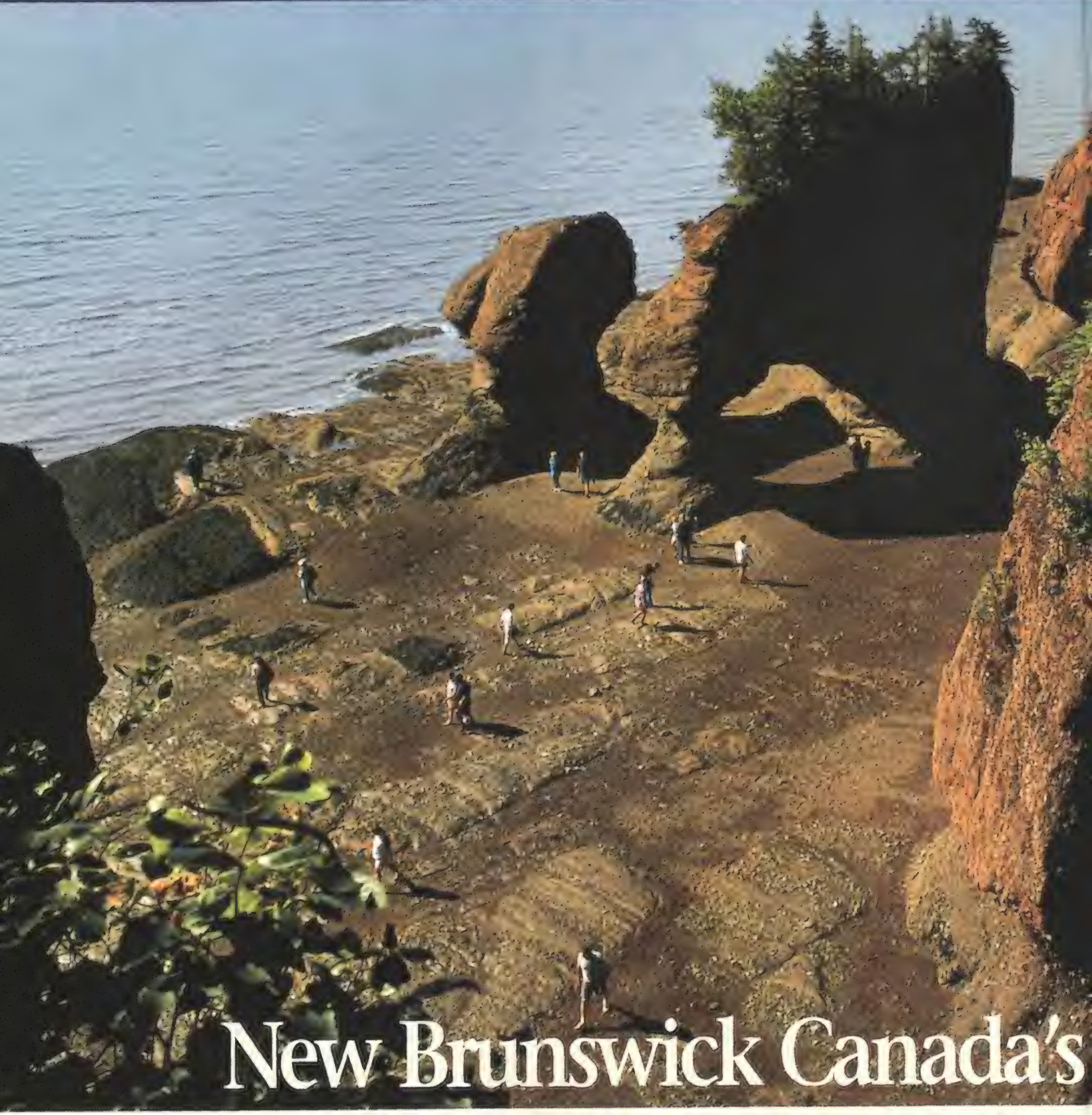

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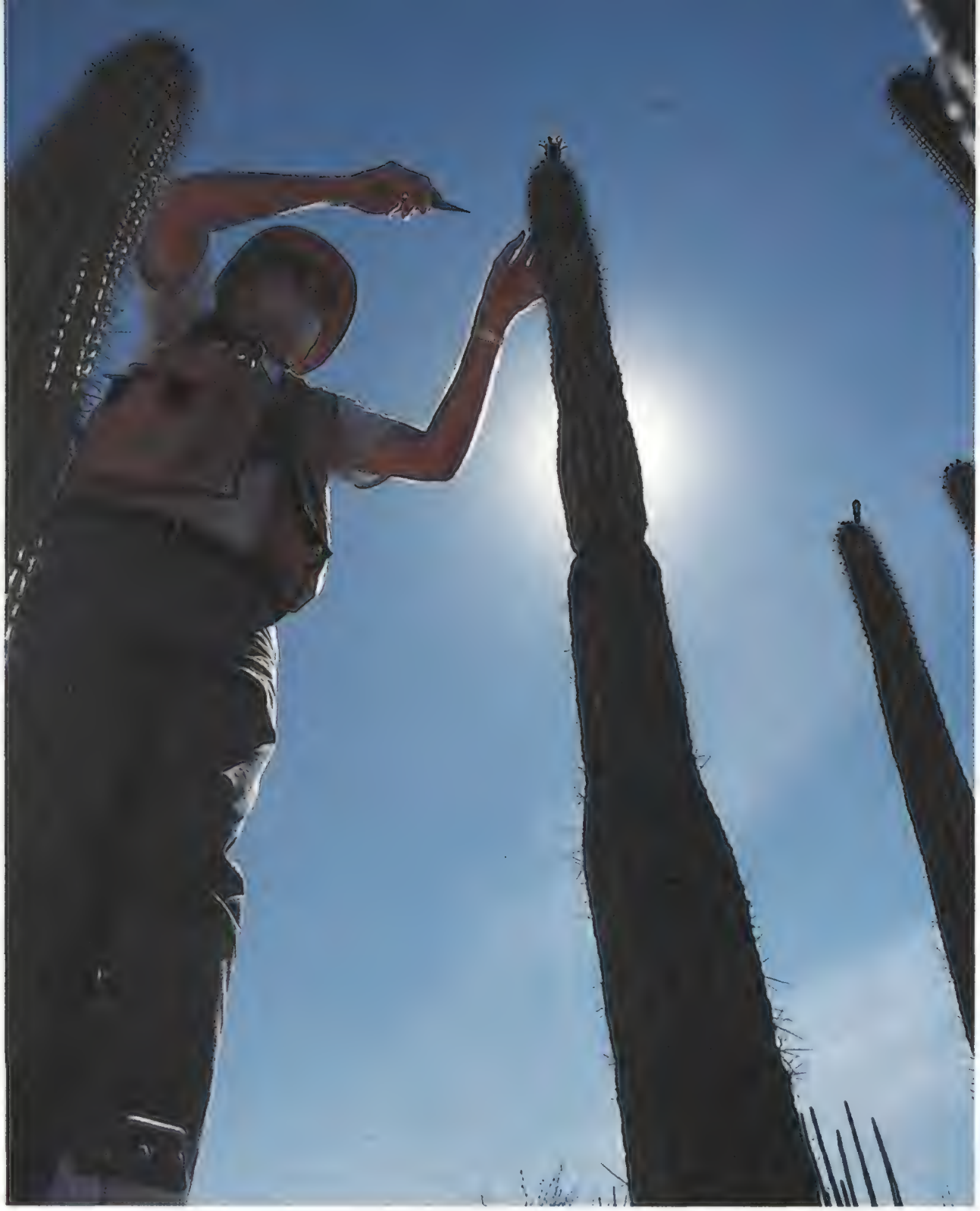
BIRDS, BEES and even nectar-feeding BATS do it

ACROSS OUR FIELDS, ORCHARDS AND BACKYARD GARDENS, THE POLLINATORS WE RELY ON FOR THE FOOD WE EAT ARE FACING THREATS ON MANY FRONTS

BY DAVID M. SCHWARTZ

Ranging up to 60 miles in a day, the lesser long-nosed bat dips into the well of an organ-pipe cactus flower.



TED FLEMING IS PERCHED PRECARIOUSLY ATOP A SIX-FOOT LADDER, HUNCHED OVER AN opalescent blossom. The amber glow of waning sunlight illuminates both Fleming and the flower, which is borne on the up-curving arm of an organ-pipe cactus. An ecologist from the University of Miami, Fleming has visited this parcel of the Sonoran Desert near the Sea of Cortés in northwest Mexico every spring for 11 years. On this April evening, he wants to divine the facts of life for those few organ-pipe cacti whose flowers have emerged, and to learn something about their pollination, the process by which a plant's male and female sex cells get together in a match that is frequently brokered by an animal.

"There's a lot more to it than pollinators sticking their noses into flowers," he says. He is at this moment sticking his own nose into or at least very close to a flower, and before the evening is out he intends to be a pollinator himself. "Only four organ pipes are flowering in the entire county right now, and the closest one is 220 meters away." Other species of giant columnar cacti, notably the cardón, the world's largest cactus, are in full bloom; but the great majority of organ pipes will not open their buds for another month or so. "So why bother?" he asks. "Why do it now?"

In another hour, the pearly white petals of both the organ-pipe and cardón flowers will stand out in the starlight, their gleaming blossoms and musky fragrance attracting lesser long-nosed bats arriving from their daytime roost, a cave in the craggy hillside to the north. The bats will dip their long noses into flowers, lap the nectar from deep wells and emerge with the yellow dust of pollen on their snouts.

By tagging plants and observing their flowers and fruit, Fleming has seen that the early-flowering organ pipes set plenty of fruit. But it doesn't make sense. "Any rational bat will visit many cardóns on its way here. It would seem a huge disadvantage to be a lone organ-pipe flower in this sea

GARY BRAASCH; PP. 58, 59 MERLIN D. TUTTLE/BAT CONSERVATION INTERNATIONAL

of alien cardón pollen. After all, pollen delivered to the wrong plant is pollen wasted." Or is it? Fleming has spent a long time wondering about that. Could the early-flowering plants, just a tiny fraction of the entire population, actually make use of the cardón pollen in some way?

Whether they deliver pollen to the "right" plants or the "wrong" plants, the lesser long-nosed bats, due shortly, are not the only species on for the job. Tomorrow morning, organ-pipe flowers still open will play host to a procession of birds and bees, drawn here because the plant offers a reward in the form of energy-rich nectar. And, quid pro quo, the plant's hospitality comes because the visitors operate a courier service, moving pollen from plant to plant.

Think of it: "the birds and the bees." Some birds and most bees are pollinators, and pollination is how flowering plants "do it": how they mix the DNA of male and female parents to create the next generation. Plants need a way to get pollen from the anther, the male part of one flower, to the stigma, the receptive female surface of another flower. What they need is a helper.

Help can come in an inanimate form. Many plants cast their pollen and their hope of reproduction to the wind. Wind-pollinated flowers tend to be small, dull and odorless because wind is not fussy about good looks or alluring scents. Think of the catkins of a wind-pollinated tree such as the birch, or the small silky flowers of corn; their tiny pollen grains are light enough to depart with the first gust, and are staggeringly abundant. A single ragweed plant releases a million each day. One way or another, a few pollen grains will probably end up on the receptive stigma of another plant.

Between 110 million and 140 million years ago, evolution took a giant leap for plantkind. To move pollen, plants began recruiting animals—not just birds, bees and bats, but a stunning array of beetles, butterflies, moths, wasps, ants, flies, spiders, earthworms, parrots, hummingbirds, even a New Zealand gecko and the pygmy gliding possum of Australia. Flowers became fancier and smellier, just to attract animals.

But the messengers don't work for nothing, so plants manufacture nectars. While dipping into the floral trough, the guests are being dusted with pollen. Sometimes, instead of feasting on floral sweets, the visitors dine on the plant's oils or perfumes, or the protein-rich pollen itself. (A meal of pollen might seem to defeat the plant's purpose, but pollen-eaters usually have bad enough table manners that part of their repast ends up on the outside.) Payday for the plant occurs a little later, when the courier inadvertently brushes pollen onto the stigma of another flower. Each pollen grain germinates and sends a tube, containing a male sex cell, to the ovary, where that cell finds an ovule and fertilizes the egg within. The ovules grow into seeds, and the surrounding ovary becomes a fruit. Thus is the sex life of a plant. It all starts with pollination.

At his field site in Mexico, Ted Fleming studies pollinators associated with giant cacti, including the organ pipe (left) and the senita (below), fertilized by its distinctive senita moth.

Like a slow-motion pas de deux over evolutionary time, plants and animals have responded to each other, sometimes evolving bizarre forms and complex mechanisms. To take advantage of new flower structures and food sources, bees have developed so many adaptations on their bodies that entomologists jokingly refer to them as flying Swiss Army knives. The coevolution of flowering plants and their pollinators has filled the earth with a diversity of life-forms in two kingdoms. A quarter-million species of plants, and almost as many animal pollinators, including at least 1,200 vertebrates, coexist in this mutually beneficial arrangement. Pollination is the engine driving ecosystems worldwide. It is, as pithily summarized by biologist Bill Brown, now science adviser to the Secretary of the Interior, the "stuff of life."

But the full story is more than meets the eye. Which is why Ted Fleming is standing on a ladder in the Sonoran Desert this particular evening. He thinks there might be something unusual going on, something that could explain why some organ pipes flower before the rest, resulting in the plants' exposure to batloads of another species' pollen.

His assistant, Helen Hsieh, hands over a cotton swab needed for the delicate procedure at hand. The swab has already been dipped into the yellow pollen adhering to a cardón anther. The biologist now dabs the swab gingerly on the stigma of the organ-pipe flower. Fleming wants to maintain this odd botanical intermarriage, so he covers the entire flower with a paper bag to exclude all pollinators, including bats. Some other flowers will be covered without first receiv-

GARY BRAASCH

ing the swab of alien pollen.

But the bag will do nothing to keep the flower's own pollen off its stigma. Fleming's earlier experiments have shown that organ-pipe cacti are "self-incompatible," meaning that they reject their own pollen to guarantee a mixing of genes. But at that time Fleming didn't introduce the "wrong" pollen. He wants to cover all bases now, so he will let the flowers in one experimental group shed pollen on their own stigmas, while the others will not be allowed to do so. To guarantee that, he slips a slender two-inch aluminum foil tube over the stigma and style, and seals it with a gentle pinch. "With luck, we'll find out if these plants have a trick up their sleeve. Stay tuned."

The gloriosa daisy, as it appears to the human eye (top), presents a different face (bottom, photographed under UV light) to a pollinator: insects detect markings that lead to nectar.

For more than two centuries, naturalists have been finding tricks up the metaphoric sleeves of flowers. Pollination is a simple theme with many variations. In 1793, Christian Konrad Sprengel published a treatise on the fertilization of flowers. About 50 years later, Charles Darwin took an interest in pollination and read Sprengel's research.

Once Darwin understood more about pollination, he used it to propose the solution to a botanical mystery. For years, botanists had puzzled over a beautiful star-shaped orchid from Madagascar. Measuring seven inches across, the Star of Bethlehem orchid has a slender nectar tube, or spur, almost a foot long. How could a pollinator reach the sweet reward at the bottom? Darwin made a bold prediction: there must be an insect, probably a moth, with a foot-long tongue. No such pollinator was found for more than 40 years, until 1903, when a hawkmoth with an 11-inch proboscis was collected in Madagascar. It was given the species name *praedicta*. The mind-boggling array of mechanisms orchids use to attract and sometimes bamboozle potential pollinators was so impressive to Darwin that he detailed many of them at length in his two-volume work *The Various Contrivances by Which Orchids Are Fertilised by Insects*.

To dispatch visiting insects to the right place, many flowers have directional markings, some of which are invisible to the human eye. The center of a black-eyed Susan is a bull's-eye for bees. With their ultraviolet vision, insects see concentric rings we can observe only when they are illuminated or photographed under special conditions. In buttercups and many other flowers, insects see nectar guides, lines that converge at nectar wells deep inside the flower, just as pilots use runway lights to help guide them.

Some of North America's best-known native bees collect pollen in a way that left Stephen Buchmann abuzz the first time he noticed it. As a high school student in Southern California, he kept bees and collected wild insects in Tonner Canyon. "I was walking through the chaparral early one morning when I heard short bursts of a very loud, very weird sound," recalls Buchmann. "I saw it was coming from bumblebees that had landed on flowers of deadly nightshade. The bees were covered with pollen, and they were buzzing in a way I'd never heard. When I went up to one very quietly and put a finger on its back, I could feel intense vibrations." He took home a few flowers. A microscope revealed that each anther had two tiny pores. "I wondered if the loud buzzing sounds had anything to do with releasing pollen from the holes."

Buchmann recently has started up his own consulting firm, Beeworks. But until then, he held a post at the Carl Hayden Bee Research Center in Tucson, Arizona. One afternoon at his lab there, he demonstrates what he found in his early experiments. He lifts a metal probe, about ten inches long, to which is taped a tiny electric motor. He flicks the switch, and the probe emits a raspy sound. Buchmann touches it to the cone of anthers in a tomato flower. A cloud of yellow pollen instantly erupts. "Welcome to buzz pollination," he says. Buchmann coined the term (and the more scientific-sounding "floral sonication") for this method of collecting pollen. About 9 percent of the world's flowering plants, around 20,000 species, must be "buzzed" by bees, who grab on to the flower petals with their sharp mandibles, hold tight with their legs, and turn themselves into living tuning forks, shivering certain muscles 200 to 500 times per

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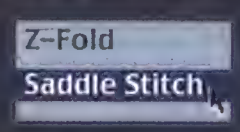

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second. They give a loud pulsed buzz in the range of middle C. Buchmann has measured the accelerations in the bee's oscillating body to be as high as 30 Gs. It is far more than the 6 to 9 Gs a test pilot can endure, but certain bees have the right stuff.

Yet the honeybee, probably the world's best-known pollinator, cannot buzz-pollinate. "Contrary to popular belief," says Buchmann, "it can't pollinate some of our most important agricultural crops." The list includes tomatoes, blueberries, cranberries, eggplant, chili peppers and kiwis. Honeybee hives are routinely rented by growers in need of pollination services for apples, almonds and other crops, but if they're growing cranberries or blueberries, they're throwing money away. Buchmann, who pioneered a technique for tracking the comings and goings of honeybees from their hive by gluing the world's smallest barcodes onto their backs, also has studied the pollen that bees had collected near a Wisconsin cranberry bog in full bloom. He found that less than 1 percent of their pollen came from cranberry flowers.

This orchid attracts a specific bee, *Eucera longicornis*, by exuding a fragrance that mimics the scent of the female of the species.

Apis mellifera, the honeybee, is a European import. Since arriving in Jamestown, Virginia, more than 375 years ago, it has spread across the continent. As pollinators, honeybees are generalists, not specialists on any particular kind of flower. Even though they cannot buzz-pollinate and they are not particularly efficient at moving pollen around (honeybees moisten the pollen, making it less available to receptive stigmas), they usually manage to get the job done.

But honeybee populations have crashed, devastated by two recent mite infestations, along with pesticide spraying and habitat destruction. Even before the bees had mite problems, beekeepers were smarting from falling honey prices and the unwelcome arrival of a highly defensive variety of honeybee, known as the Africanized bee, which has taken over colonies, raising liability concerns. From a high of nearly 6 million colonies during the honeybee's heyday after World War II, that number is down to around 1.5 million today. About half the honeybee losses have occurred in this decade. It's even worse for feral bees, unmanaged honeybee colonies living in the wild. In many areas, they have declined by as much as 85 to 90 percent. "Feral colonies are, for all practical purposes, gone," said Cornell University apiculturist Roger Morse in the mid-1990s, although there have been signs of small, localized rebounds since then.

In a survey of 200 visitors to the National Zoological Park's pollination exhibit, most of the individuals polled associated bees with stings, or honey production—not with pollination. Yet the value of honeybees as pollinators is estimated to be 50 or 60 times greater than the worth of the honey and wax they produce. In the Central Valley of California, 800,000 hives are rented each year to pollinate the $800 million almond crop. No longer able to obtain enough bees locally, growers must truck in colonies. While owners of big farms and orchards can afford to bring in the bee boxes when their crops bloom, home gardeners and small farmers, often without realizing it, rely upon native species and feral honeybee colonies for pollination.

As director of beekeeping for the Maryland Cooperative Extension Service from 1988 to 1996, Gordon Wardell saw growers suddenly lose what they took for granted. "Many small farmers had woodlots acting as reservoirs for feral bees, and they were getting great pollination year after year," Wardell says, "but when the mites wiped out all our feral bees, their flowers withered on the vine." The pumpkin crop was especially hard hit: in Maryland in 1995, there was virtually no pollination and a very poor harvest.

The decline of the honeybee has been a stinging wake-up call to the role of pollination. Honeybees may have the best PR agent, but they pollinate only 15 percent of the world's crops. Yet all pollinators—native bees, birds, bats and others—are vulnerable to many of the same threats, especially the one-two punch of land-clearing for development and agriculture, followed by the spraying of pesticides. In 1996, Stephen Buchmann and Gary Paul Nabhan coauthored *The Forgotten Pollinators*, a call to protect the many species of animals who, often unnoticed and unappreciated, work seven days a week, including overtime, in order to pollinate plants needed for much of our food and fiber.

"I do not usually like to describe the need for biodiversity or environmental protection in purely economic terms," says Gary Nabhan, an agricultural ecologist and science director of the Arizona-Sonora Desert Museum, "but imagine Thanksgiving dinner without cranberries, Halloween without pumpkins, dessert without chocolate. You need pollinators for all of these things. Pollinators are directly responsible for one out of every three bites you take."

Three years ago, Cornell University ecologist David

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Pimentel decided to put a sticker price on some of the important services that people benefit from for "free," courtesy of biodiversity. "Policy makers and politicians tend to listen more closely when you have dollar signs in front of your numbers," says Pimentel, an expert on biological pest controls. He estimated annual economic values for organic waste disposal, nitrogen fixation, soil formation, pollination and other functions that would cost a bundle if we had to pay for them. "After decomposition of organic wastes, worth $60 billion, pollination was number two, valued at $40 billion." With price tags in place, losses become more apparent. Pimentel found $300 million worth of pollinator services lost each year due to pesticides.

In 1970, forests in New Brunswick, Canada, were massively sprayed to control spruce budworm. The budworms succumbed, and so did the sweat bees and bumblebees who tend assiduously to the flowers of berries. The yield of blueberry fields adjacent to the forests plunged by almost 75 percent, and it remained below normal for years. One researcher has referred to native blueberry bees as "flying $50 bills," because that's the value of the blueberries each one pollinates in her lifetime.

Two varroa mites, resembling rust-colored ovules, are visible on this honeybee's thorax; the parasite infests colonies in some 30 states.

It's not only those trying to grow pumpkins or blueberries who have found pollinators conspicuously absent on their plots. On a June afternoon in 1997, Ted Turner, the largest private landholder in the United States, was walking at Avalon, his Florida plantation. Flowers were in bloom, but Turner did not hear the expected ambient buzz. "Where are the bees?" he asked, and repeated the question at the next board meeting of the Turner Foundation. He challenged the foundation board, which includes a wildlife biologist, and its staff to find out. "After meeting with Nabhan and Buchmann and reading their book," says Mike Phillips, executive director of the Turner Endangered Species Fund, "we concluded that there was a major crisis brewing and it was going unnoticed. We decided that we would make conservation of pollinators and their plant partners a major focus."

Their first major push, a $500,000 project administered by the Pollinator Conservation Consortium of the Arizona-Sonora Desert Museum in Tucson, will be conservation of the 1,500-mile migratory corridor used by pollinators traveling between the United States and Mexico.

On the morning after Ted Fleming set paper bags and aluminum foil tubes on cactus flowers, he is jouncing down the road to his study site, talking about plants that grow there and the bats that pollinate them. The bats migrate north in spring, fueled by the nectar of several species of giant columnar cacti. In late summer and fall, when agaves are in bloom, they follow them south. "The bats pollinate both kinds of plants at different times of year," he says, "so if you wipe out either one, the other will suffer. They are linked through the bats."

Fleming points out the window at a landscape that still shows signs of the cattle grazing that ended about five years ago. The soil is dusty and compacted, and the spaces between plants unnaturally large. Even the massive cardóns bear browned-over wounds, scars from the maws of hoofed grazers.

But the most obvious environmental threat extends beyond our immediate view. Unchecked development has turned native habitat into building lots, cattle ranges, citrus plantations and vineyards. About 100 miles to the south, in San Carlos, there are new resorts and condos cropping up. In 1992, Fleming drove from central Mexico to southern Arizona along the migratory route of long-nosed bats. Rufous hummingbirds and other nectar-feeding birds follow similar routes, continuing farther north. "Where are the cacti?" he asked himself many times during the journey. "Where are the agaves? Where is the food for a hungry nectar feeder? I saw agriculture. I saw development. I did not see many places where a migrating bird or bat could stop for a meal."

Perhaps the best-known migratory pollinator is the monarch butterfly. Its populations fluctuate wildly, and some butterfly experts, including Lincoln Brower and Robert Michael Pyle, believe the monarch could, in the near future, stop migrating altogether. Pyle, who founded the Xerces Society, dedicated to invertebrate conservation and named for the extinct Xerces blue butterfly, believes that colonies of monarchs could remain in warmer locations year-round. Habitat destruction along their route has rendered their annual journey perilous indeed.

During their southerly flights of up to 2,000 miles from

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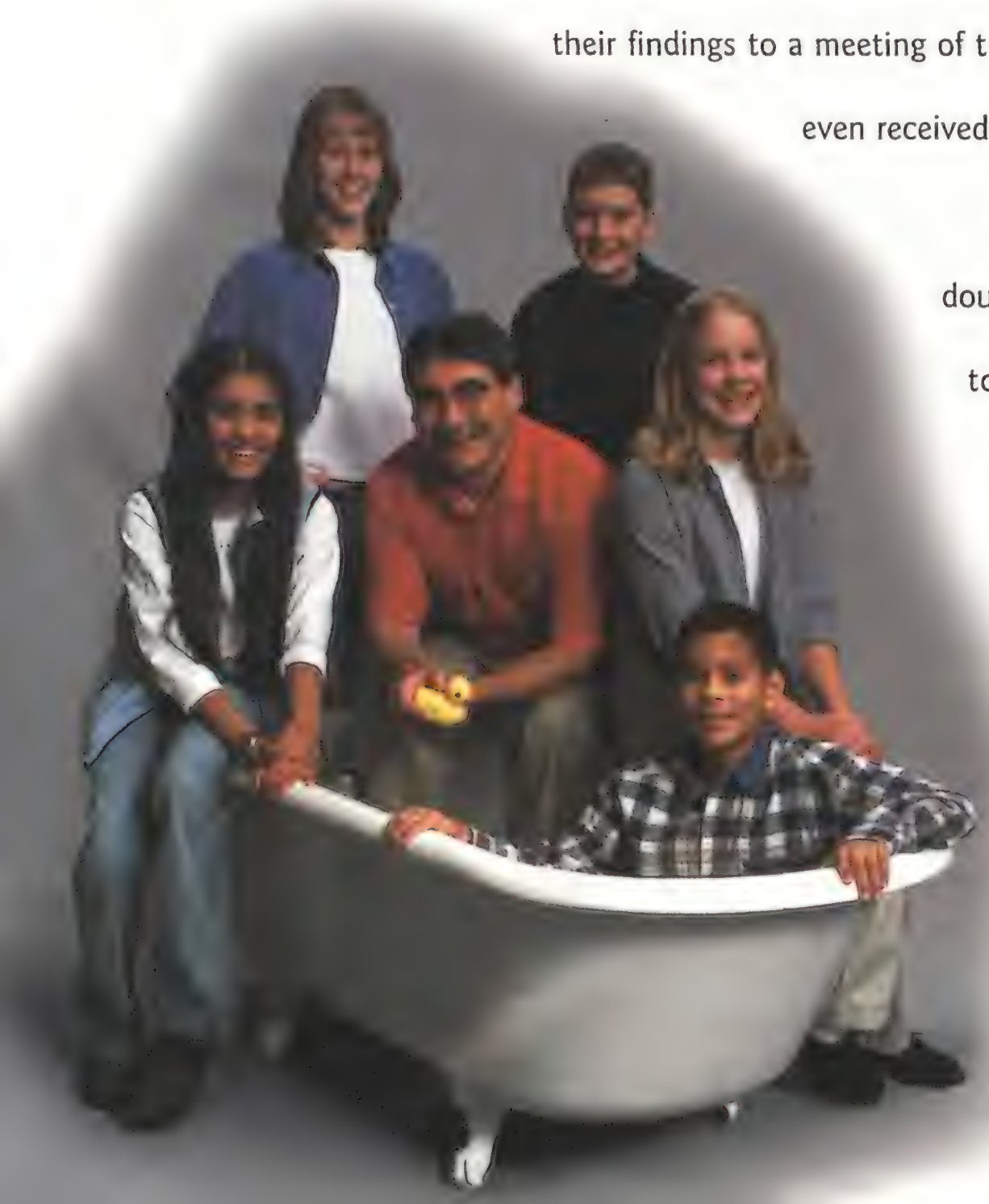

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In Bellingham, Washington, Brian Griffin, who runs a business raising native bees, nurtures pollinators inside nesting cans (above). A detail (below) of a nesting can's paper-tube incubator reveals bees in the final pupal stage of development. Griffin also provides bee boxes, blocks of wood drilled with openings (left), as a habitat for various species of hole-nesting bees.

North America in the fall, the butterflies face the same challenges as other nectar feeders looking for fast food. But they have a new set of problems once they arrive at their destination. About 90 percent of the world's monarchs cluster all winter in the oyamel fir forests of the central Mexican highlands. The forests act as blankets, insulating the butterflies from cold and rain. But oyamel timber is in demand, and the forests are falling fast. In 1986, the president of Mexico declared as protected zones 5 of the 12 mountain ranges where monarchs overwinter. Later that year, one was clear-cut across 50 percent of its area. Even with better enforcement, Brower fears the ridgetop preserves are too small. In the end, the result could well be that only isolated colonies of monarchs will remain here year-round.

The logic of protecting pollinators and plants in tandem seems flawless, yet only one in 15 plants on the endangered species list has had its pollinators identified, let alone protected. Fortunately, ways of approaching that problem are changing, even at the highest levels of government. Secretary of the Interior Bruce Babbitt, who is keenly interested in the embattled status of our pollinators, acknowledges that it takes work to get people excited about spineless critters like bees

GARY BRAASCH (3)

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and moths. But people do understand pollination, he says, adding that pollinators could be a pathway to bringing groups together in a common cause.

If the paradigm for the next century is about preserving and restoring connections between plants, animals, people and the environment, then the scene behind Hole 3 of Veteran's Memorial Golf Course in Walla Walla, Washington, might be predictive. Here is a test case for the dream of Melody Allen, executive director of the Xerces Society. Allen envisions a landscape of what she calls "connected patchy habitat." The fragmentation of habitat will probably never be undone, but some fragments can be restored and connected. "We want to see roadsides, backyards, corporate campuses, schoolyards and golf courses brimming with native plants. Then we'll have patches of linked habitat, which is really important for maintaining pollinator populations."

She is starting with the golf courses, in particular the out-of-play "roughs" that constitute about 70 percent of the land comprising U.S. golf courses. In a pilot project funded by the U.S. Golf Association, Allen oversees the horticultural rebirth of roughs at three courses in eastern Oregon and Washington. Where crabgrass and exotic trees once grew, work crews have installed yarrow, rabbitbrush, arrowroot, lupine, blanketflower and buckwheat, native plants friendly to native pollinators, especially bees. Interspersed among the seedlings are "bee blocks," short pieces of wood drilled with about 30 holes in diameters ranging from 1/8 to 5/16 of an inch, and covered with an angled plywood roof. It is luxury housing for solitary bees, who do not nest in hives but in small holes found in fallen logs. There are 600 species of bees native to this area.

On this warm September day, Allen and bee biologist Vince Tepedino have been brought to Hole 3 by course superintendent Joe Towner. The three of them are stooping to the height of the blocks, which are fixed to wooden posts. A plug, consisting of a leaf, blocks the opening of every hole. It is a telltale sign that the hole is now a nursery for bee eggs deposited by the mother, provisioned with food and sealed from the outside world to protect the brood. "Look!" she rejoices, "every single hole is full! This is fantastic!"

Tepedino will return regularly to the three courses to identify the nesting bees and monitor their success in reclaiming territory. Before their habitat was destroyed, they were the natural owners of the niche. He is hoping the native bees will return as native plants are reintroduced.

In the opposite corner of the state, in Bellingham, Brian Griffin is taking another approach to encouraging wild bees. He is selling them. Griffin decided to try rearing orchard mason bees, also called blue orchard bees, native to Washington and 46 other states. Studies have shown that 250 females can completely pollinate an acre of apple trees. "It's amazing," says Griffin, "especially when you consider that an orchardist typically rents one hive of 25,000 to 40,000 bees to pollinate one to two acres!" Following techniques pioneered at a U.S. Department of Agriculture bee lab in Utah, Griffin set out a block of wood he had drilled with twenty 5/16-inch holes. Orchard mason bees from his neighborhood filled every hole, and the following spring, 19 of the 20 nests hatched bees that, in turn, nested in new blocks.

Griffin also noticed a dramatic improvement in the pollination of apple and pear trees he had planted a few years earlier. So he set out even more bee blocks the next year. "I had a five- or six-fold increase in bees every year," Griffin recalls. Now he ships bees to customers all over the United States. He also wrote and published *The Orchard Mason Bee*; the book has sold 18,000 copies.

At Entomo-Logic, entomologist Evan Sugden's company in Monroe, Washington, mason bees are reared for shipping to gardeners across the country. Sugden is also a keeper of honeybees, and he believes the two kinds of pollinators com-

At El Rosario Sanctuary in Mexico's Sierra Madre, monarch butterflies converge. Most overwintering grounds have been destroyed by logging, farming, grazing and development.

PATTI MURRAY/ANIMALS ANIMALS

plement each other. Farmers and orchardists, he says, can easily learn to rear mason bees; there would be no need to hire bee colonies. Because of the natives' astonishing efficiency, the numbers needed are so small that they can easily be kept in cold storage and warmed up in time for the bloom.

Perhaps the future in managing land for pollinators can be found, on a small scale, at Tubac Farms near the Mexican border in Tubac, Arizona. Here, native pollinators seem to be doing fine, encouraged by the farming practices of Mark and Moira Larkin, who plant a diversity of crops, including forage, fruit trees and ornamental flowers, as well as vegetables, on a 710-acre property. The Larkins use herbicides and pesticides only when necessary, applying them sparingly. They have left standing old hedgerows of mesquite, acacia and hackberry; their fields are set among undisturbed scrubland. They make a conscious effort not to remove plants that some farmers would call weeds. They also have become active in Friends of the Santa Cruz River, a group dedicated to preserving the river and the riparian zone that harbors wildlife and native plants. "We believe a healthy river and healthy wildlands nearby are healthy for the farm," says Mark Larkin, as he hoists a basket of fat crook-neck squashes into the bed of his pickup truck.

"Squash is actually a good example of how the Larkins are doing the right thing," says Jim Donovan, a graduate student at the University of Arizona who has been monitoring pollinators here for two years. "Honeybees and native squash-and-gourd bees can pollinate squash equally well, but honeybees don't like squash flowers. If there's something else around, they'll go there, whereas the squash bees are specialists." Donovan's studies have shown that, on the Larkins' farm, there are as many species of pollinators in the crop fields as on the undisturbed land nearby. "For an important service like pollination," says Donovan, "it's dangerous to rely on one species. If it goes extinct, you're in trouble. It's like relying on just one stock in your 401(k) plan!"

I spoke to Ted Fleming two weeks after I saw him in Mexico. He was most eager to share his observations. "Fruits from the flowers that were hand-pollinated with the 'wrong' kind of pollen are chuggin' right along," he exclaimed. This is support for his unusual hypothesis: in the absence of the "right" pollen (from plants of the same species), organ-pipe cacti have a backup plan. They are stimulated by the pollen of another plant to produce fruit and seeds on their own.

But an even odder twist is unfolding. With or without the tube that covers the stigma, the cross-pollinated flowers are developing equally well. In other words, they are bearing fruit even if they were prevented from self-pollinating! They seem to have cloned their own genes without fertilization.

Fleming was pleased but seemed only a little surprised, since unexpected results are de rigueur in the study of pollination. But there is one kind of surprise he really does not want to find when he returns next spring: his study site degraded like so much of the land nearby, the plants and their pollinators reduced or completely gone. How far would the effects be felt? "Rufous hummingbirds go on to northern British Columbia to breed," he says. "So the reach of the energy from my little patch of desert goes far."

After his current round of experiments, Fleming plans to spend a year examining Landsat satellite imagery to assess the state of the binational "nectar corridor" used by migratory pollinators. The results will help pinpoint areas most critical for conservation action. It will be part of the migratory conservation project of the Pollinator Conservation Consortium. "I've done a lot of hard-core science," he says, "and now I want to protect ecosystems so the next generation of scientists will have something to study."

David M. Schwartz, a frequent contributor, also has written 50 children's books on a variety of scientific and mathematical subjects.

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Perceiving the manhole cover as artifact, John Stilgoe traces its meanings: the 130-year-old disk evokes a time when local foundries manufactured this kind of product.

Reading the Messages in Everyday Things

BY RICHARD & JOYCE WOLKOMIR

JOHN STILGOE, THE ROBERT AND LOIS Orchard Professor in the History of Landscape Development at Harvard University, stares raptly at a manhole cover. Lunchgoers hurry by along Broadway, just a few blocks from Harvard Yard, in Cambridge. But it is only Stilgoe who notices the iron disk embedded in the pavement underfoot. He walks around it, deciphering the embossed lettering.

"CELCO," he reads, and translates, "Cambridge Electric Light Company." But it is the maker's name that interests him: the Stockwell Company, of Cambridge. "This is about 80 years old, from when we still had foundries here," he says. To Stilgoe, such humble artifacts—manhole covers, fire hydrants—are "portals into the past." Reading their manufacturers' names, Stilgoe traces the foundry industry's southward migration, from Worcester and Pittsburgh to Chattanooga and Birmingham. "And the newest covers come from India," he says. "The dirtier industries migrate to regions that have little political power."

Stilgoe is a scholar of the ordinary: lampposts and Interstate ramps, back doors, backyards, back alleys and the backs of signs, shoreline boat hulks, power-line poles, mailboxes, malls, the configuration of parking spaces. We whiz by in our SUVs and sport coupes, never noticing. But Stilgoe notices. He sees the man-made environment as a "palimpsest," a document written upon, erased, overwritten, the underlying layers still faintly legible. He reads between the lines of boarded-up railroad stations and the locked mailboxes stacked at the entrances of gated communities, precluding even postal workers from going in. Shamanlike, he interprets. But, mainly, he notices.

"It's interesting," he says, striding along Broadway, blue eyes searching like dish antennas, "that we still call the part of the street where vehicles go the 'carriageway.'" Another etymological arena where archaic usage is common, he says, happens to be law—legal terminology often lags behind modern parlance.

He stares at a policeman leaning against his parked cruiser: "Look, he's wearing motorcycle boots, but he has no motorcycle!" Stilgoe may dig into this boots-but-no-motorcycle question. He knows some things about motorcycles, such as that the shift lever imprints a mark on the inner toe of the driver's left boot. He has flabbergasted booted strangers by asking,

AS AN INSPIRED OBSERVER OF LANDSCAPES URBAN AND RURAL, HISTORIAN JOHN STILGOE TEACHES US ALL TO SEE WITH NEW EYES

PHOTOGRAPHS BY RICHARD SCHULTZ

"What kind of bike do you drive?" Our clothes, he says, tell more about us than we suppose. He notes, for instance, that while the stereotype calls for professors to wear elbow patches on their tweed jackets, actual academics wear out their sleeves' forearms, from leaning across desks and writing.

In 1971, Stilgoe became his family's first college graduate. When his parents, a boatbuilder and a homemaker, asked him to suggest a gift, he requested the complete Sherlock Holmes stories. "Sherlock solved mysteries by *noticing*!" Stilgoe says. Growing up in Norwell, Massachusetts, Stilgoe was quiet and alert. "I didn't like school much, but I watched the teachers, and I'd know which ones had been arguing," he says. It was his mother, also a "noticer," who taught him to be sharp-eyed. His father taught him to build boats. He still builds boats in his barn, most recently restoring a 1937 wooden lifeboat. Stilgoe lives with his wife, a marine contractor, and their 17-year-old twin sons in an 1820 farmhouse in Norwell, where they raise bees, buckwheat, sunflowers and Rhode Island Reds. His family, most of them farmers and tradesmen, goes back to 1639 in Norwell; Stilgoe feels a long ancestral association with things grown and built.

Stilgoe halts: hard-hatted workers are replacing a block of sidewalk. "Look, that guy is screeding the concrete to make it flat," he says, hurrying across the street to watch. "You almost never get to see it done," he says, as if stumbling upon a moon-rocket launch. He notes, "No man has a level—they're doing it all by eye, making a gentle pitch so the rain will run off." Stilgoe, who worked his way through college on construction crews, points out a worker inscribing expansion joints between sidewalk sections. Then he spots a man raking the still oozy concrete with an unfamiliar tool. "I've got to find out . . . "

The sweatshirted worker, used to being invisible to passersby, looks startled when a prematurely gray-haired man wearing a gray suit, a big yellow bow tie and a black, wide-brimmed hat transfixes him with an intense gaze and asks what he is doing. "This is called a Fresno float, making the surface of the concrete smooth," the worker says. "I wonder why they call it 'Fresno'?" Stilgoe asks. The worker shrugs. This could lead to yet another long stint in a Harvard library.

Stilgoe is addicted to Harvard's libraries. At Harvard, he earned a doctorate in American civilization, and went on to become a professor at the university and to write, at last count, six books, ranging from *Borderland: Origins of the American Suburb* to *Metropolitan Corridor: Railroads and the American Scene*. His most recent book, *Outside Lies Magic*, teaches us to see mundane cityscapes and townscapes and roadscapes as he does, as scenes rich in information, studded with question marks.

In opinion polls, students have recognized John Stilgoe as Harvard's most accessible professor.

Farther along the street, he finds three knee-high concrete cylinders embedded at the sidewalk's edge. "Bollards," he says. "They used to put granite bollards along streets like this to break the legs of runaway dray horses and break the wheel spokes, but these are new—some architect just thought they looked nice." He turns onto Ellery Street. "Here, this house is wood, but the two-car garage is concrete block," he says. "Old building regulations required garages to be concrete or steel, because newfangled horseless carriages were considered apt to spontaneously combust!"

Momentarily, he ponders a book-size metal square set in the sidewalk, labeled "G," for gas valve. "There's a vast underground domain most of us don't know about," he says. "I take my freshmen out to look at what's under their feet. I tell them they're not far enough along yet to raise their heads and see what's overhead!"

In polls, students have cited Stilgoe as Harvard's most accessible professor. They pop in and out of his office, where the decor includes a portrait of the Three Stooges, photographs of railroad tracks and a framed document reading "Third-Place Certificate in the Eighth Annual Great River Rowboat Race." Conspicuously absent is a computer. Stilgoe believes the glowing screen would intrude when he confers with students in his office. He also shows up for classes an hour early, offering to talk with students about whatever they wish. These pre-class chats become intellectual jam sessions, with student questions launching Stilgoe on riffs.

On a recent morning, an hour before Stilgoe will begin teaching "Studies of the Built North American Environment Since 1580," 14 students gather. One boy, knowing the professor's fascination with the U.S. mail, reports watching postal inspectors jump from an unmarked van in his Manhattan neighborhood to handcuff a man. "They have guns, too," Stilgoe says. "And in the 19th century, on one Post Office car in Maine, mail sorters even carried hand grenades." He says it all illustrates the importance of a publicly organized postal service that guarantees the inviolability of every letter. "And that's not where we're going," he warns. "There are no postal inspectors protecting your e-mail!"

"Why are you smiling this morning,

Stilgoe, whose father was a boatbuilder, has constructed and restored a number of vessels in the barn that also serves as his workshop.

Elizabeth?" he asks another student. Elizabeth is looking for help with her research project on subways. Stilgoe lights up, delighted: trains! Originally, he says, subway tunnels were whitewashed. "Women wouldn't go underground unless it looked clean," he explains, adding that only places where women can go have been considered to be morally acceptable. "Count von Zeppelin persuaded potential passengers that his dirigibles were safe by taking women up right away, and early subways had to convince people, especially women, it was safe to go underground—for instance, by providing a conductor in every car," he says.

He riffs on to public sanitation, citing a Bullwinkle cartoon character as the last remnant of the "white wings," the white-uniformed street cleaners whom their commissioner, Col. George Waring, sent marching through New York City. "Where can I find out about milkmen?" a girl asks, and Stilgoe—always animated in class—winces, eyes squinched up as if in pain, and says, "Let me think, let me think—I'll get back to you."

Indicating the class is about to begin, he climbs atop the radiators and teeters the length of the room, lowering the blinds so he can illustrate his lecture with some of his more than 70,000 photographs, everything from street signs to storm grates. He has taken them while journeying nationwide, often traveling on foot or by bicycle, because cars go too fast for drivers to practice the art of noticing. As he often does, he begins the class by reading the latest letters he has received from former students. Over the years, they have reported everything from the discovery of Virginia-Kentucky barns in an Idaho valley, perhaps indicating migration, to one student's claim he could differentiate eastbound passengers from westbound passengers at Chicago's O'Hare Airport by taking note of the colors of their raincoats.

Today's class subject will be what defunct railroads foretell. "I'm deeply fascinated by how period information can be used to plan the future," Stilgoe says, flashing a slide of a 1929 railroad map. "What does global warming mean for vacationing in northern New England and eastern Canada?" Paper companies, he says, ponder placing resorts deep inside their huge wilderness tracts, accessible only by rail. For one thing, railroads disturb wilderness least. And they offer control over who gets in. "We tend not to think of transportation as a system of behavior control, but it's the automobile that has made anywhere a

potential crime scene," he says. "Before the advent of bicycles, it was hard for criminals to operate far from railroad lines."

Another slide: an Edward Hopper painting, characteristically showing empty track, trains at rest. "Note that even a busy railway is mostly still, and that makes it less nerve-racking to live beside than a busy highway," Stilgoe says, building his argument that we are verging on a new railroad age. Next slide: a rusting locomotive, festooned with a For Sale sign. Stilgoe confides its price is $78,000, and he daydreams about buying it as a kind of technological pet. Old pictures, he says, flashing several on the screen, almost always show trains traveling to the left: in map terms, westward. Children's books about railroads were once a big genre, he reports. And people, particularly women, once placed their trust in the railroad to watch over their safety.

Now, after class, Stilgoe is walking the streets of Cambridge and Somerville, demonstrating what you can learn by noticing things. He stops to observe a van, from a windshield-repair firm, parked beside a car with a shattered windshield. The van's driver is replacing the broken glass. "They're bringing windshield repair to the car!" Stilgoe says. "This shows we're in a low-wage era, because otherwise no company could afford this kind of service."

He walks on, peering over fences and hedges into backyards. "You can learn a great deal about America by taking a look at our backyards," he says. To prove it, he picks a yard at random. "See, there's a new pergola going up," he says. "It's because of the growing dislike of the sun; you'll see more of that." At the corner, he points to a metal number tacked onto a power pole, noting that every pole bears an identifying number. "It's the poor man's geo-positioning system: if you need help, you can tell the police where to find you, or tell somebody precisely where to find a spot along a country road you want them to see," he says.

When Stilgoe came to Harvard in 1973, to work on his doctorate, he was speaking with his department chairman when a yellow jacket landed on the man's neck. Stilgoe plucked off the wasp and was stung. The man was so impressed ("A student who'll take a sting for his chairman!" Stilgoe says) that he suggested Stilgoe should team up with Prof. John Brinckerhoff Jackson—prickly, but a genius at the cultural study of landscapes. Jackson, a former Army intelligence officer, applied espionage skills to gathering information from landscapes and cityscapes. "Come back at 6:30 tomorrow morning," Jackson growled. When Stilgoe actually appeared at 6:30 A.M., the first student ever to do so, Jackson took him under his wing. It was his mentor who helped Stilgoe refine his ability to use mundane man-made objects, like storm-sewer grates and mailboxes, as probes into the built environment's history, sociology and economics.

"You can learn a great deal about America," Stilgoe proclaims, "by taking a look at our backyards."

"Exploring" is Stilgoe's term for what he does, which is to notice things. He has noticed, for instance, that the underlying kitchen paint in old houses is often apple green. And he has found out why: from 1900 up to about 1920, experts advised men to paint kitchens that color because it was supposed to soothe nervous people, especially wives thinking about careers and suffrage. "It's mood modification by color, and you can see it today, everywhere from police stations to gambling casinos," he says.

Even Stilgoe notices things for which he has no immediate explanation. Why, he wonders, are public elementary schools so often painted in bold, primary colors, but not private schools? He advocates noticing just for pleasure. And, after studying old texts, he believes our ancestors did it better. "Nowadays," he has written, "almost no one who walks under deciduous trees notices that all the spots of sunlight on the walkway, whatever their different sizes, are the same shape." He believes we no longer notice such natural phenomena because we're taught to pay attention to different kinds of things, such as computer commands and icons. "Now we're knowledgeable about things we can buy, whether it's automobiles or the latest hit CD, but who notices that when you walk on a beach along the water's edge, your footprints do not fill with water?" he says.

Power lines are among Stilgoe's favorite studies, "the great spider's web slung just above the national landscape." Many countries, he notes, run electric wires along steel pylons, or bury them, while much of America runs its wires along slowly listing wooden poles. "This was a land of long distances and cheap timber," he says. Urban street trees began to die around 1900 because of the poles: first telephone and then power companies continually pruned the trees and cut them down, so their branches would not rub against wires. Sometimes, Stilgoe says, you can hear the lines hum. If you take out a compass near a suburban electrical substation, you sometimes see the needle swing away from north, because the substation alters the local magnetic field. Power-line rights-of-way, he has found, are

Over the years, Stilgoe has photographed the telling details that shed light on our vanishing past. Clockwise, from top left: A blue-painted porch ceiling (said to keep away flies); a railroad overpass; a crossroads store; a shipbreaker's yard; the kind of stone pier erected in prosperous 18th-century New England; an addition built to replace the privy for a house in a Pennsylvania coal town.

JOHN STILGOE (6)

a wildlife highway system, interlacing the entire country, used by animals as large as moose and bear. Peering through the concealing brush where such corridors cross roads, Stilgoe has seen "eyes looking back."

When he looks at a landscape, he sees socioeconomic ghosts. Roads and hamlets and factories, for instance, often still focus on long-gone railroad tracks. Movers and shakers are making plans, he says, to revive these old railway rights-of-way, creating new commuter lines serving the already overcrowded satellite ring cities.

On his walk through Cambridge, Stilgoe is drawn to mailboxes. "This one's dark green, so it's a storage box, where drivers drop off mail and letter carriers pick it up to deliver, but it's odd that it doesn't say 'not for deposit,'" he says. He notes that marketing firms will mail one kind of coupon to even-numbered houses along a street, and a different kind to odd-numbered houses, and then study the differences in redemptions. At one time, the U.S. Postal Service tried allowing its urban customers to draw a large red star or asterisk next

to the address on a stamped letter; the Postal Service would provide next-day delivery at no extra charge.

Mail, he says, has been a shaper of society. For instance, until about 1900, to send letters or receive them, rural Americans had to visit post offices, usually in general stores, selected by whichever party was in power. And the Postal Service handled no large packages. The advent of Rural Free Delivery and Parcel Post, with metal mailboxes lined up along rural roads, enabled the mail-order companies to prosper. And Stilgoe notes that, at that time, when trains carried the mail, the Postal Service provided same-day delivery of first-class mail between big cities like New York and Boston. It also helped to keep the trains' passenger service going, because the Postal Service was a huge, paying consumer of rail service. "When the Post Office decided to fly most first-class mail," Stilgoe says, "the country lost most of its intercity passenger-train service."

"Our past is slipping away," Stilgoe observes, "and it is rarity that creates value."

Walk a street with John Stilgoe and your head swims. He notices so much, and he knows what so much of it means. He has noticed, for instance, that across America, walking or riding a bicycle, you discover that roads are crumbling. Is it a portent that the auto's hegemony has peaked? In the arid high plains he has noticed that rain running off highways creates an artificial moist zone alongside, with its own ecosystem. He has discovered that old inns frequently popped up atop long upward inclines, where horses needed rest and water after the climb. But old roads mainly curved around hills rather than going over, to give horses a break. He knows that bicycling became a huge fad in the years leading up to 1900, with the League of American Wheelmen, a major political-action group, agitating for improvements in road conditions.

Stilgoe reminds us that the Interstate Highway System is legally the "Dwight D. Eisenhower System of Interstate and Defense Highways." Bicycling along Wyoming back roads, he has experienced the "rare thrill" of seeing state troopers stopping traffic so a jet fighter can practice emergency landings on an Interstate.

Now, on a Cambridge street, Stilgoe has climbed up on a dumpster to peer inside. "It's all bricks. They'll be sold somewhere, to make something new that looks drenched in time," he says, climbing down. He adds: "A professor in England even wrote a book called *Rubbish Theory*." Americans, he says, increasingly want new construction to incorporate something old, like an antique chandelier in the lobby of a modern office building. "It's because our past is slipping away, and it is rarity that creates value," he adds. He stops to examine plantings outside an office building. "I'm interested in this penchant for swaths of bark mulch," he muses. "The forest products industry figured bark might bring in more profits than boards. It took ten years, but now it's a huge market."

Several years ago, lecturing to Harvard alumni, he mentioned four railroads that would be good investments. Afterward, a financier cornered him: "We paid a consulting company half a million dollars to get exactly that information. How did you do it?" Stilgoe shrugged. "They maintain their roadbeds and keep their equipment in good shape; their track workers take pride in the right-of-way," Stilgoe said. "I just noticed."

Stilgoe and students peruse a vintage travel brochure for insights into the past.

Richard and Joyce Wolkomir are frequent contributors to Smithsonian. *Richard Schultz is based in Boston, Massachusetts.*

HERE, FOUR BRAVE PEOPLE REFUSED TO MOVE. WHAT THEY DID MOVED AN ENTIRE NATION.

Sometimes it takes eloquent words to change a country. Other times, all that's required is one simple act.

On February 1, 1960, four college students in Greensboro proved just how consequential such an act can be. They'd been informed at a local lunch counter that it was the store's stated policy to refuse service to Negroes. So, spontaneously and peacefully, they decided to make a statement of their own: They refused to get up, until they were accorded the same basic rights other Americans took for granted.

Word of their bold deed spread like wildfire. And soon, the devastating tactic of the sit-in was being used to prick consciences all across the South.

The store has gone the way of separate water fountains now. But two plaques on the site pay silent tribute to the four men and the impact their courageous act had on the civil rights movement.

Of course, these plaques only mark the beginning of the rich assortment of African-American history and heritage that awaits you in North Carolina. For example, this is the state where you'll find the southeast's largest collection of fine original African art - at the Mattye Reed African Heritage Museum. Plus so much more. For additional information, including special itineraries that focus on African-American heritage, please call 919-733-7559.

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The Grandeur That Was Rome

A NEW EXHIBITION AT THE PHILADELPHIA MUSEUM OF ART SHOWCASES THE ETERNAL CITY AS THE ARTISTIC AND CULTURAL CAPITAL OF 18TH-CENTURY EUROPE

BY HELEN DUDAR

Jousting on the River Tiber at Rome was painted in 1750 by French artist Claude-Joseph Vernet.

WE MIGHT BEGIN WITH A MEDITATION ON THE BAROQUE AUDACITY REQUIRED TO EXPLORE an entire century of art as a single museum event. Is it a unique form of institutional folly? Or might it be a venture so brave that it is doomed to success?

Without a visible tremor, a scholarly team at the Philadelphia Museum of Art has set aside great expanses of wall and floor space to celebrate the 18th century—and to demonstrate that in much of that time the true art capital of the Western world was the city of Rome.

The exhibition, "The Splendor of 18th-Century Rome," will be on view in Philadelphia from March 16 to May 28 and will then move on to the Museum of Fine Arts, Houston, June 25 to September 17. It is sponsored in part by Advanta and the American Water Works Company, Inc.

Until fairly recently, the notion of the artistic supremacy of 18th-century Rome has carried weight for little more than a small, lonely band of enthusiasts and historians. Even now the community of true believers is hardly overpopulated. France has dominated the academic narrative since the 19th century, when it nurtured crops of major schools of art that flowered seductively into Impressionism.

The pro-Rome contingent takes the position that the French, having occupied Rome after the Napoleonic conquest at the close of the 18th century, slyly managed to distort the record so that their importance edged backward into an age that did not belong to them. As Joseph Rishel, the museum's senior curator of pre-1900 European painting and sculpture, puts it, "In the literature, the general conception is that Italy is the dozy, sleepy place, as opposed to Paris as the great surging, energetic artistic center."

Now, to be sure, as the papal city, Rome had always attracted large numbers of the devout as well as streams of cultural explorers. But what Rishel is talking about is Rome as a *magnet*, a lure for traveling royalty and aristocrats, for untitled but importantly monied travelers, for writers hoping to enlarge their experience of the world in a city simmering with talent and, above all, for artists in quest of education, polish, recognition and clients. The rule laid down by Dr. Samuel Johnson in 1776 was unequivocal: "A man who has not been in Italy is always conscious of an inferiority."

The torso of this composite figure was a copy of Myron's *Diskobolos*. The piece was restored as *Diomedes with the Palladion* by Bartolomeo Cavaceppi, c. 1772-76.

In Europe, the 1700s were a time of relative prosperity and, more significantly, peace, which toward the end of the century would be shattered by Napoleon. In the decades before the appearance of the Napoleonic forces, Rome became the focus of what was grandiosely labeled the "Grand Tour."

Reaching the city in 1786 for the first of two long stays, Johann Wolfgang von Goethe, at 37 already a major literary figure in his native Germany, recorded the thrill of his entry: "Now, at last, I have arrived in the First City of the World!"

"Now, at last, I have arrived in the First City of the World!" wrote Goethe of his entry into Rome.

He was a ravenous sightseer, overwhelmed by the glories of a fabled city, by the "palaces, ruins, gardens, wildernesses, small houses, stables, triumphal arches, columns." He appears to have visited them all and to have loved almost everything he saw.

An outing to the Vatican Museum found Goethe "swept . . . off my feet" by the sight of the cool, elegantly muscular *Apollo Belvedere*. An antique Roman copy of the Greek god, it was, in that day, considered a supreme masterwork. Goethe confessed himself "obsessed" by the piece. He was equally enthralled by the Pantheon,

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Although Italian artist Giovanni Paolo Panini took liberties with detail and perspective in his c. 1734 *Interior of the Pantheon, Rome*, he captured the famed edifice's salient features.

the great domed house of worship that had survived since ancient Rome. But, above all, he was held captive by the Sistine Chapel.

In fact, he seemed driven to return to the chapel again and again to feast on Michelangelo's *Last Judgment*. It was easier to be a culture vulture in Goethe's day than in these fevered, tour-guided, rigidly scheduled times. By tipping the custodian, he and his friends were allowed in whenever they liked. Sometimes he carried a snack to sustain him while he nourished his sensibilities on the glories of Michelangelo's genius. Once, exhausted by the demands of tourism, he managed a nap on the papal throne.

In our day, we arrive by plane or speed into the city by train or bus or hired car for an arduous week of sight-seeing. Eighteenth-century tourists to Italy arrived by ship or made the bone-rattling trip by chaise or carriage over cruel roads and, if they were fortunate, were carried across the Alps in a sedan chair.

It may sound a bit harsh, but with sufficient wealth, no tourist wanted for life's necessities. In 1704, the prominent architect Lord Burlington, traveling from England, reached the city with a party of 15 retainers to see to all his needs; the entourage included a doctor, an artist, a groom, a cook, a tutor and a bookkeeper.

Like Lord Burlington, most of the Grand Tourists were British. They usually stayed for months, meeting

Old Rome was not unlike modern Manhattan; every other resident seemed to be from some other place.

the stellar literary figures in residence, making their way through elegant art-filled palazzi (which were not yet public museums, as many are today), examining breathtaking collections of ancient sculpture and stalking the spectacular treasures of the Vatican. Artists who came to study would often stay a few years and sometimes forever. In Rome, "I live like a gentleman," the British sculptor John Deare wrote his family, to explain why he was not coming home.

For young painters and sculptors in quest of guidance and inspiration, the city was a rich source of learning as well as an education in worldly matters. In one way, old Rome was not unlike modern Manhattan; every other resident seemed to be from some other place—from other Italian towns and cities (Antonio Canova of Venice),

from England (Sir Joshua Reynolds, Gavin Hamilton), France (Jacques-Louis David, Claude-Joseph Vernet, Jean-Honoré Fragonard), Switzerland (Angelika Kauffmann, Henry Fuseli), or Germany (Wilhelm Tischbein, Anton Raphael Mengs). Even Colonial America sent off the young Benjamin West for an education in painting, which he would go on to perfect during a lifelong residence in England.

There were more than enough institutions of learning to accommodate an aspiring young artist, including a school specializing in the nude, a boon to artists who hoped to concentrate on images of the human figure. Arriving from Germany in 1779, Tischbein counted ten private teaching academies in the city. The same year, the talented young Canova, who would become one of the stellar sculptors of the age, checked out the city's official academy and found himself struggling for air in a studio crammed with more than 150 students, a setting so stifling that he was finally compelled to flee.

With peace and wealth, the popes and the city's monied classes dedicat-

ed themselves to sprucing up or creating major monuments. Old family palaces were renewed and embellished; the unabashedly melodramatic Trevi Fountain was given life and liquid; the Spanish Steps were built, and the square bordering them became the neighborhood where British residents and tourists liked to hang out.

To be sure, beauty did not invade every corner of Rome. Samuel Powel, a Philadelphian who would one day be his city's mayor, toured the sumptuously decorated Barberini Palace and complained that the place was dirty and nasty. He was not alone; there were tourist laments about the unclean look of much of the city. In those days, city travel depended on horses, which are not famous for their sanitary habits. On the other hand, Rome was spared the contemporary curse of incessantly snarling motorcycles and gasoline fumes.

The talented young Canova found himself struggling for air in a studio crammed with more than 150 students.

Today, a trip abroad without a camera is almost unimaginable. For the 18th-century traveler of means, a souvenir of a visit was a costlier substitute—perhaps a portrait in a glamorized urban or country setting, preferably set down on canvas by a "name" artist. In nearly 50 years of labor in Rome, for example, Pompeo Batoni, a native of the Tuscan town of Lucca, became one of Europe's most celebrated portrait painters, turning out some 200 likenesses of British subjects. Often his art might include an image of a cute pet dog. Batoni's commercial labors for tourists paid the rent but did not gild his local reputation, which was enhanced by his paintings of more "serious" subjects such as history and mythology.

In one respect, tourists then were hardly different from modern visitors. They ran through Italy "knick-knackically," in one traveler's mocking phrase, and they carried home, as British author Horace Walpole noted in an account of his souvenir collection, "medals, lamps, idols, prints." Walpole confessed to an even grander want: "I would buy the Coliseum if I could."

If one's baggage did not include a portrait, it might carry a brilliantly faked replica of antiquity. Yesterday, as today, the remains of Rome's great ancient civilizations held visitors in thrall. The big-league producer of these souvenir items was Bartolomeo Cavaceppi, who was kept busy and made rich by an affluent and enthusiastic international clientele.

Cavaceppi's studio was staffed with skilled helpers energetically turning out copies of important classical pieces and restoring, not always accurately, genuine antiques that had lately been unearthed. Archaeological excavations and newly dug foundations regularly yielded large and small memorabilia of antiquity, as indeed they continue to do in our day.

Still another obligatory purchase was a fine print of a view of Rome or its outskirts as seen or even imagined by the prolific Giovanni Battista Piranesi, a transplant from Venice. Piranesi was an architect who, failing to

Pompeo Batoni's richly composed and subtly modeled masterpiece *The Marriage of Cupid and Psyche* was commissioned for King Frederick II of Prussia in 1756.

This artful study in red and black chalk was rendered by the famed etcher Giovanni Battista Piranesi in 1749-50 in preparation for his print *Parte di Ampio Magnifico Porto.*

find sustaining building projects, took up etching. Over a 40-year period, he produced some of the most potent, vividly detailed and occasionally fantasized images of the modern and ancient city.

In a way, Philadelphia's show is the climax of decades of insider talk. It is also a kind of homage to a scholar who was an early, sometimes isolated partisan of the period: Anthony Morris Clark, a big bear of a man with a matching personality, who amassed a trove of 18th-century works during decades of art-hunting.

Although Clark's last curatorial position was at the Metropolitan Museum of Art, the executor of his estate decided that what remained of the collection after the paintings had been sold—378 old master drawings, 204 period prints and assorted other objects—should go to the Philadelphia Museum of Art.

The museum exhibited them in 1980, but that hardly approached full coverage of the subject. Rishel, a former colleague of Clark's, says those who strongly supported Clark's position found themselves "wandering around saying we really should carry through on what he never did—a full show of his subject."

Toward that end, the Philadelphia curators, together with an international team of scholars, have assembled more than 424 works by more than 160 artists, from museums and private collections that span our continent and much of Europe, along with some opulent pieces of furniture and decorative objects whose designers are unknown. In addition to Rishel, the Philadelphia organizers of the exhibition include Ann Percy, curator of drawings, and Dean Walker, senior curator of European decorative arts and sculpture.

One of the ironies of this show is that it is punctuated with the works of artists who were once household names and are now almost totally unfamiliar. For example, the museum walls offer four elegant drawings by Carlo Maratti. In a catalogue essay, Edgar Peters Bowron, a curator at the Museum of Fine Arts, Houston, tells us that at the start of the century Maratti was "the most influential artist in Rome—indeed . . . in all of Europe. . . . " Among other important roles, he was first painter to a French king and to seven popes. Today, out-

J. PAUL GETTY MUSEUM, LOS ANGELES; P. 86 GEMALDEGALERIE, STAATLICHE MUSEEN ZU BERLIN PREUSSISCHER KULTERBESITZ

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The jewel tones, learned iconography and inventive design of Angelika Kauffmann's *Self-portrait between the Arts of Music and Painting* make it one of her most memorable works.

side of Italy, you'll rarely find a major Maratti painting in a public collection.

It may also be difficult to discover a dedicated museumgoer who longs for the sight of works from the hand of Giuseppe Cades, a man who in his day, Bowron tells us, "turned heads with his seemingly effortless ability to paint and draw . . . in every style from Baroque to Romanticism. . . ." But Cades' handsome oils and drawings may, at least, be seen in some major institutions, and eight are in the show.

An entire gallery has been dedicated to Piranesi's prints, drawings and books—more than 50 of them. He is, after all, the man who showed all Europe the splendors of old and new Rome. If you lacked the means or the time to travel to Italy, you might invest your dreams in one of Piranesi's affordable architectural images. If you were visiting the city, you probably found your way to his engraving shop on the Corso. Some of his images, especially a famous prison series, are chillingly eerie; but a fair number are romantic fantasies or, at least, joyous exaggerations.

Probably the most spectacular detours from real life are the invented views of Giovanni Panini. On commission from a French count who was on a diplomatic mission to Rome, he produced four canvases about art and the city; they are large, show-offy and fun. The exhibition has two of them: the vast interior of a picture gallery crammed with paintings of modern Rome and a second work showing a big space thick with images of old Rome. Each interior is a soaring space hung from floor to ceiling with paintings, dotted with important sculptures and populated by small parties of connoisseurs as well as artists turning out copies. Another Panini, this one taken from life, is of the interior of that great domed monument of old Rome, the Pantheon.

The busy hand of Pompeo Batoni provides 22 paintings and drawings ranging over many of the subjects—antiquity, mythology, Christianity—that engaged artists of that day. Of course there are also portraits, including the requisite British subject—Lady Mary Fox, for instance, gowned in blue, gazing winningly at the viewer, and cradling . . . yes, an adorable dog.

The show has four pieces by Angelika Kauffmann, a rare figure in her time and for many decades to come. A Swiss, she had learned the fundamentals of art from her father, a church mural painter, then studied in

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Boy on a Dolphin, 1764-66, was created by Joseph Nollekens, a British sculptor who worked in the studio of the renowned artist and restorer Bartolomeo Cavaceppi.

Rome and spent a number of years in London as a popular portrait artist. After a brief, bad marriage, she met and married the Italian painter Antonio Zucchi and returned to Rome for much of the rest of her life. A sharp intellect clearly went with the gifts of hand and eye. She was a friend of Goethe during his two Roman stays and an intimate of Johann Joachim Winckelmann, the great German scholar who became curator of the Vatican's collection of antiquities and transformed the study of archaeology into a scholarly discipline.

One of the four Kauffmann pieces on view is an invincibly flattering self-portrait of a pretty young woman making a major life decision. Kauffmann was apparently gifted in two directions: the painting shows her saying a fond farewell to a disappointed muse of music (score in hand) and turning toward the figure offering her an artist's palette.

The show has five pieces by Antonio Canova, who settled in Rome in 1780, when he was in his mid-20's, just in time to help send the long-favored Baroque style into oblivion. Like many of his fellow sculptors, Canova was inspired by the antique Greek and Roman pieces he encountered and became the leading exponent of the neoclassical style.

One of the museum's major triumphs is a rare loan from St. Petersburg's State Hermitage Museum—a grand, neoclassical yet sentimental piece called *Cupid and Psyche*, which Canova chipped out of marble for the Empress Josephine in the days of her husband's reign. With lifted pinky, young Psyche is delicately placing a butterfly, the symbol of the soul, in Cupid's hand.

In Rome of those days, when the reigning pope needed an artist to restore an antiquity, the man to summon was Bartolomeo Cavaceppi. One of the most striking pieces to come out of his studio is a marble figure labeled *Myron's Diskobolos Restored as Diomedes with the Palladion*. Diomedes was a Greek hero who stole the idol of the gods from Troy, but any contemporary museumgoer will recognize the torso of the figure as a copy of Myron's great, oft-imitated work, known also as the *Discus Thrower*.

The *Diomedes* is a brilliant example of a custom of the time: completing a fragment with other fragments, old and new. It was the Rome-dwelling British painter Gavin Hamilton who found the torso and gave Cavaceppi the idea for making it whole. This was done by placing on the body an ancient head that, to an expert's eye, is plainly from another period. To complete the piece, many additions of new materials were also provided, including the right leg from the knee down and the left leg from the middle of the shin down.

One of the strangest pieces to come out of the Cavaceppi atelier in multiples was *Boy on a Dolphin*. It shows us a plump toddler tragically impaled by a dolphin's fin. At least six versions of the sculpture in several sizes were sold to English, Irish, French and Russian clients. Cavaceppi claimed that two centuries earlier it had been designed by the great Renaissance painter Raphael and executed by the sculptor Lorenzetto.

The exhibition, which begins with some beguiling period maps showing the city as it looked two and a half centuries ago, ends with an appropriate celebration. We don't think of Rome as a carnival town, but periodically this seat of faith and intellect exploded for the sake of shared pleasure. There were street entertainments, carnivals and fireworks. Horses were raced down the crowded Corso, then as now a main thoroughfare. Grand palace salons were jammed with fancy dress balls. As Goethe described it in a long diary passage, at carnival time "the most serious-minded Roman . . . throws dignity and prudence to the winds."

No, the Philadelphia Museum of Art is not scattering prudence in any direction, but in homage to those festivals, the entrance to the show is festooned with banners and the final gallery offers some art that shows Rome having a wonderful time.

Frequent contributor Helen Dudar writes on the arts from her home in New York City.

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WHEN WAR CALLED, DAV

THE FIRST MODERN WAR CORRESPONDENT,
RICHARD HARDING DAVIS COVERED
THE FIRST MODERN WARS

BY JOHN H. CHETTLE

THERE WAS MUCH EXCITEMENT WHEN the *Scot*, bearing the American war correspondent Richard Harding Davis, docked on February 22, 1900, at Durban, on the east coast of South Africa. It was a hot, humid night, with a typically torrential summer thunderstorm raging. Davis was the best-known war correspondent of his time, its Edward R. Murrow or Peter Arnett, and he was carrying influential letters of introduction to cover the war then being fought between Britain and the Boers. When the ship's band struck up "Yankee Doodle Dandy" in his honor, the British officers, trying to hold their balance in the heavy weather, doffed their hats, thinking it the American national anthem.

It was neither the first, the last nor the worst mistake made by the British in this first major war of the 20th century. But the anecdote does illustrate the mood—unthinking, self-confident, insular—of a moment when Britain's imperial expansion bumped up for the first time against the reality of a formidable foe. More significantly, with all the wisdom of hindsight, we can see it as Britain's last hurrah as a world power. The country that had ruled the waves and much of the earth since the defeat of Napoleon in 1815 was soon to have this role taken over by its understudy in waiting, the United States.

And it was fitting that Davis should have been there to cover the war that began Britain's decline. Less than two years before, he had been sent by the New York *Herald* to cover the

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Richard Harding Davis not only reported history—the Boer War for *Harper's*—he helped make it, as at San Juan Hill, and wrote smash Broadway hits, too. Opposite, Davis shows off his campaign style.

IS ANSWERED

Reporting from Cuba with Theodore Roosevelt during the Spanish-American War, Davis, on the right, made the future President's reputation as a vigorous leader. Davis even took part in a charge with Roosevelt and his Rough Riders.

Spanish-American War in Cuba, after which the United States found itself an imperial power. Almost delirious with excitement, he had even seized a carbine and joined Teddy Roosevelt's charge up Las Guásimas, on the way to San Juan Hill, and in "a long speech before some of the men," the intrepid colonel had promised him a captaincy in the regiment anytime he wanted it.

And yet, Davis is now almost a forgotten figure. His most recent biographer, Arthur Lubow, in his *The Reporter Who Would Be King*, has written of him: "To be famous virtually all his adult life and forgotten promptly at death: this is celebrity in its purest form. Time, washing away the merely fashionable, has erased all impressions of Richard Harding Davis." There is a good deal of truth in this. His novels, though best-sellers at the time—*Soldiers of Fortune*, for example, published in 1897, sold more than half a million copies—are now forgotten. So are his plays, though at one time he had three running simultaneously on Broadway. So is the impression of his personality, though it inspired as many young men and women to go into journalism as did Woodward and Bernstein in a later era. But he is worth remembering both for the sheer exuberance of that personality as well as for his war reporting, for both were deeply admired by his peers and may never have been excelled.

If it were not a fanciful thought, one might have said that he was destined to be a war reporter. He was born on April 18, 1864, a year before the end of the Civil War, to a newspaperman father and a novelist mother. After brief sojourns at Swarthmore College and Lehigh and Johns Hopkins universities, he joined the Philadelphia *Record*, and then the *Press*. At the *Press*, he donned a disguise as a street laborer and set out to work his way into a criminal gang. His success and subsequent story electrified his readers.

He moved on to New York in 1889 and joined Charles A. Dana's *New York Evening Sun*, then generally regarded as the best newspaper in the country. "Make the paper interesting" was Dana's motto, and Davis was an apt pupil.

CULVER PICTURES; P. 94 KEHRIG COLLECTION; P. 95 LIBRARY OF CONGRESS (3)

At 26, already well known through articles that chronicled the lives of the rich and famous, he became famous himself with a short story, "Gallegher, a Newspaper Story," published in 1890 by *Scribner's Magazine*. In the same year he became managing editor of *Harper's Weekly*.

With his exceptional good looks—square jawed, broad-shouldered and clean-cut—he became the model for his friend, illustrator Charles Dana Gibson. He was a fitting consort to the beautiful, assertive women—the "Gibson girls"—the artist was making famous, with their elegant dresses, hourglass waists, piled-up hair and confident, even disdainful mien. Davis had no less an appreciation of the importance of clothes in creating a distinct personality. From his earliest days as a reporter he wore English-cut suits, kid gloves, patent-leather boots, double-breasted waistcoats, twice-around ties, and in the evening a high silk hat and frock coat. "When . . . Richard Harding Davis came into the Palm Room," wrote Booth Tarkington after Davis' death, "then, oh, then, our day was radiant! . . . Of all the great people of every continent, this was the one we most desired to see."

William Randolph Hearst paid him the record fee of $500 to cover the Harvard-Princeton football game, and a further extravagant sum to cover the coronation of Czar Nicholas II. From the spring of 1896 to the summer of 1897 he also reported on the Cuban insurrection, the inauguration of William McKinley, the Greco-Turkish War and Queen Victoria's Diamond Jubilee. "Words cannot tell," he wrote of the jubilee, "at least not unless I am well paid for it what London is like to-day." The Cuban insurrection showed again his ability to find the telling detail that illuminated a scene. He described the execution of one of the Cuban revolutionaries, Adolfo Rodríguez, by a Spanish firing squad. Rodríguez showed the greatest self-control as he permitted himself to be shifted around for the convenience of the firing squad. After he was shot, his cigarette still burned in the grass, "a tiny ring of living fire," symbolic to Davis of the revolutionary spirit.

When the Spanish-American War broke out in 1898, although Theodore Roosevelt was Assistant Secretary of the Navy, Richard Harding Davis may have been more famous; in any case, the two were made for each other. More than any other war correspondent, Richard Harding Davis put the Rough Riders on the front page. The regiment of volunteers, recruited by Roosevelt himself and composed of blue bloods and cowboys, roughnecks and famous athletes and members of the "better clubs of Manhattan and Boston," was promising material. Roosevelt, for his part, not only ensured that Davis was on the front line to report his own gallantry, but told the Associated Press, even while the battle was raging, that there was no officer in his regiment who had shown more courage than correspondent Davis.

Arthur Lubow recounts that the humorist Finley Peter Dunne satirized both Roosevelt and Davis when he had his Mr. Dooley imitate TR's style: "We had no sooner landed in Cubia than it became nicessry f'r me to take command iv th' ar-rmy which I did at wanst. A number of days was spent be me in reconnoitring, attinded on'y be me brave an' fluent body guard, Richard Harding Davis."

In the short period between the Spanish-American War and the outbreak of the Boer War, Davis made one major change in his life. At the age of 35, after a glamorous career of escorting beautiful and accomplished women—with a chivalry and decorousness remarkable even by the standards of that age—he got married. And he managed to do it with all the flair that might have been expected of him.

He was in London, and one of his

At the Press, he donned a disguise as a street laborer and set out to work his way into a criminal gang. His success and subsequent story electrified his readers.

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In South Africa to cover the Boer War, Davis privately admitted that he admired the Boers. Boer guerrillas (right) harried the British for two years after the formal end of the war.

friends was with him when he answered invitations and wrote notes. A 14-year-old boy in the uniform of a messenger waited to deliver them. Davis handed him two letters. The friend recalled: "'Jaggers,' [Davis] directed, 'take this to the Duchess of _____ and this to No. __ St. James Square and'—he picked up another letter and his eyes twinkled—'take this to Miss Cecil Clark, Prairie Avenue, Chicago, U.S.A.'

"The friend saw Jaggers . . . accept the letters without batting an eye.

"'Yes, sir. Very good, sir.'

"Davis stifled his laughter. 'Can you go to Chicago?' he asked.

"'Yes, sir. Whenever you say, sir.'"

The affair became public and excited vast interest. Immense speculation centered, in particular, on the contents of what was actually a small parcel. Did it contain a proposal? Or even an engagement ring? It did in fact hold a ring, for Clark had reconsidered her earlier refusal of him. She was the daughter of a wealthy Chicago businessman and had visions of an artistic career. But the romantic gesture appealed as much to her as it did to Davis, and when Jaggers returned to London in 18 days, to be welcomed by a crowd of thousands, he brought with him a gracious answer. Cecil and Richard were married in Marion, Massachusetts, on May 4, 1899, with Ethel Barrymore as maid of honor and a toy figure of Jaggers in the middle of the wedding cake.

"I wonder with intelligence like theirs," wrote Davis acidly, "that their Intelligence Department did not tell them the Boers fought with war clubs and spears."

The Boer War began in October of the same year. It started, like so many wars of the 20th century—such as the United States' war in Vietnam—because politicians underestimated the resolve of their opponents. For the British, the two Boer (literally "farmer") Afrikaner republics in the interior of South Africa, created by descendants of early Dutch, French and German immigrants, were a minor irritant. For the strategically minded, they blocked a clear route to the north, the so-called Cape-to-Cairo route. Even more tenuously, some argued that they were a threat to the route to India. Richard Harding Davis was not alone in believing that the discovery of the world's largest gold deposit on the Witwatersrand in the Transvaal, a northeastern province in the Republic of South Africa, had a lot more to do with it.

For its part, the British Army thought that the Boers would probably not attack, but that if they did the war would not last more than a few months. "I wonder with intelligence like theirs," wrote Davis acidly, "that their Intelligence Department did not

CULVER PICTURES

tell them the Boers fought with war clubs and spears."

The Boers were no more prescient. They'd fought the British once before, 20 years earlier, beating them in one battle, and the British had made peace. But that was then. Now the Boers had found gold, and they were confronted by two determined imperialists. The first was Joseph Chamberlain, the British Colonial Secretary. Even more warlike was his proconsul in South Africa, Alfred, Lord Milner. The British, to intimidate the Boers, sent troops to South Africa. Led by their dour president, Paul Kruger, the Boers issued an ultimatum calling for withdrawal of the British troops. The British refused to comply, and the war began. The Boers advanced a few miles into British territory, began a decorous siege of the towns of Ladysmith, Kimberley and Mafeking, and waited for the British to make a frontal attack. The British, as though loath to disappoint them, obliged, and in one week in December 1899, the so-called Black Week, they sustained three defeats.

Davis initially shared the view that it would be a short war, but these events clearly indicated otherwise, and he made haste to leave for South Africa, accompanied by Cecil. Forbidden by army regulations to take her on campaign, he installed her in a suite at the Mount Nelson Hotel, in Cape Town, "a very, very smart hotel just like a West End club," which to this day still nestles, pink, spacious and grand, in the shadow of Table Mountain.

Leaving Cecil at the Mount Nelson with her Belgian maid and an English bull terrier appropriately called Jaggers, he departed for Durban. Lubow describes his comforts during the campaign: a "lovely green" tent with window panes, ventilators, a clothesline, and doors that looped up; a bathtub, a folding bed, and a staff of three to ensure that the shine on his boots, gaiters and harness rivaled that of the British officers.

He was less impressed with their professional approach to the war. In a letter to his mother, Davis wrote more frankly than in his reports to his newspaper:

"Friday the British charged a hill with one of their 'frontal' attacks and lost three Colonels and 500 men. In the morning—it was a night attack—when the roll was called only five officers answered. The proper number is 24. A Captain now commands the regiment. It is sheer straight waste of life through dogged stupidity."

But at last the British raised the siege of Ladysmith, and Davis waited in the town with Winston Churchill, whom he admired and whom he had met in Cuba and then again in London.

"His is a picturesque career," wrote Davis with great prescience just six years later. ". . . And that he is half an American gives all of us an excuse to pretend we share in his success." Churchill, already a famous young British army officer and writer, had recently resigned his commission and was, like Davis, in South Africa to cover the war as a correspondent.

The British were obliged to call for troops from all over the empire and for a new general, Lord Roberts of Kandahar, a veteran of the Indian Army. On his way out to South Africa by sea, he closeted with Col. George Henderson, his chief of intelligence. The author of a biography of Stonewall Jackson that is still in print, Henderson was one of the preeminent military thinkers of his time. He had been deeply impressed with Jackson's readiness to take large risks, his relent-

Winston Churchill, already a famous young British army officer, had resigned his commission and was, like Davis, in South Africa as a war correspondent.

BETTMANN/CORBIS

less speed when he determined upon an objective, his understanding of the impact of surprise upon the enemy and his insistence on fighting the battle on his own terms.

The essence of the strategy Henderson and Roberts adopted was to abandon the railroad and strike across the country at Bloemfontein, the capital of the Orange Free State, the second of the two Boer republics. Almost none of the plan worked: the cavalry was nearly destroyed as a fighting force, but the strategy—or what was left of it—was a triumphant success.

Then he met Bessie McCoy, a popular actress whose husky contralto song "The Yama Yama Man," about a sort of bogeyman of the period, enjoyed wide popularity.

For the surprise paralyzed the Boers. Their own deficiencies, their extreme individualism and their lack of discipline frustrated any coordinated response, and the British pushed on past Bloemfontein toward Pretoria, capital of the Transvaal.

Several weeks before the attack, Davis had come back by sea to Cape Town, to be met by the resourceful Cecil in a rowboat, about two miles offshore, waiting to greet him. She had had his clothes cleaned and pressed, bought his favorite brand of cigars, ordered a lavish dinner for the two of them in his sitting room and filled it with flowers.

It was at this point that Davis, bored by the slow preparations for Roberts' offensive, decided to join the Boer forces, accompanied by Cecil, who insisted on seeing action. It is an indication of the impact of the war around the world that Davis, an Anglophile who a few months before had been telling Lord Milner how to win the war, was now totally disenchanted with the British. He wrote to his mother: ". . . the English irritated me and I had so little sympathy with them that I could not write with any pleasure of their work. My sporting blood refused to boil at the spectacle of such a monster Empire getting the worst of it from an untrained band of farmers—I found I admired the farmers."

It was a sentiment widely shared in the United States at the time, though the McKinley administration supported the British. Many Americans, like Julian Ralph, another war correspondent with the British forces, saw the Boers as similar to the mountain folk of Virginia, Tennessee and Kentucky, dressed in rough-and-ready clothes, leading outdoor lives on the backs of horses, keeping their rifles handy and living in the same simple homes.

BROWN BROTHERS

Few Americans at the time considered the plight of the blacks in South Africa. Blacks participated in the war, serving both sides, but the future of South Africa was still assumed to belong to the whites. And it was generally thought that the war was being fought to decide which would predominate, the Boers or the British. Even Davis, who was probably ahead of public opinion on this matter—he wrote to Roosevelt in 1901 to congratulate him on inviting Booker T. Washington to lunch at the White House—gave no apparent thought to the question.

If Davis was disenchanted with the British, Cecil was even more emphatic. Shrugging off the panic of the landlady of one of their hotels, "a grand low comedy character from Brooklyn . . . who was sitting up in bed in curl papers, and with a Webley revolver," she insisted on going to the front, where she went among the Boers, begging them to make a stand.

"I had promised," wrote Davis, "to get her under fire which was her one wish so I said that she was now well under fire for the first and the last time. To which she replied 'Pshaw!' I never saw anyone show such self-possession. . . . The shells were now falling all over the shop, and I was scared to distraction. But she took about five minutes to see that her saddle was properly tightened and then we rode up the hill."

By June 1900 the British had captured Pretoria, and declared the war won. Davis and Cecil had left for the Portuguese East African port of Lourenco Marques (now Maputo) before then, because, Davis said, "I did not much care to see them enter, or to be forced to witness their rejoicing."

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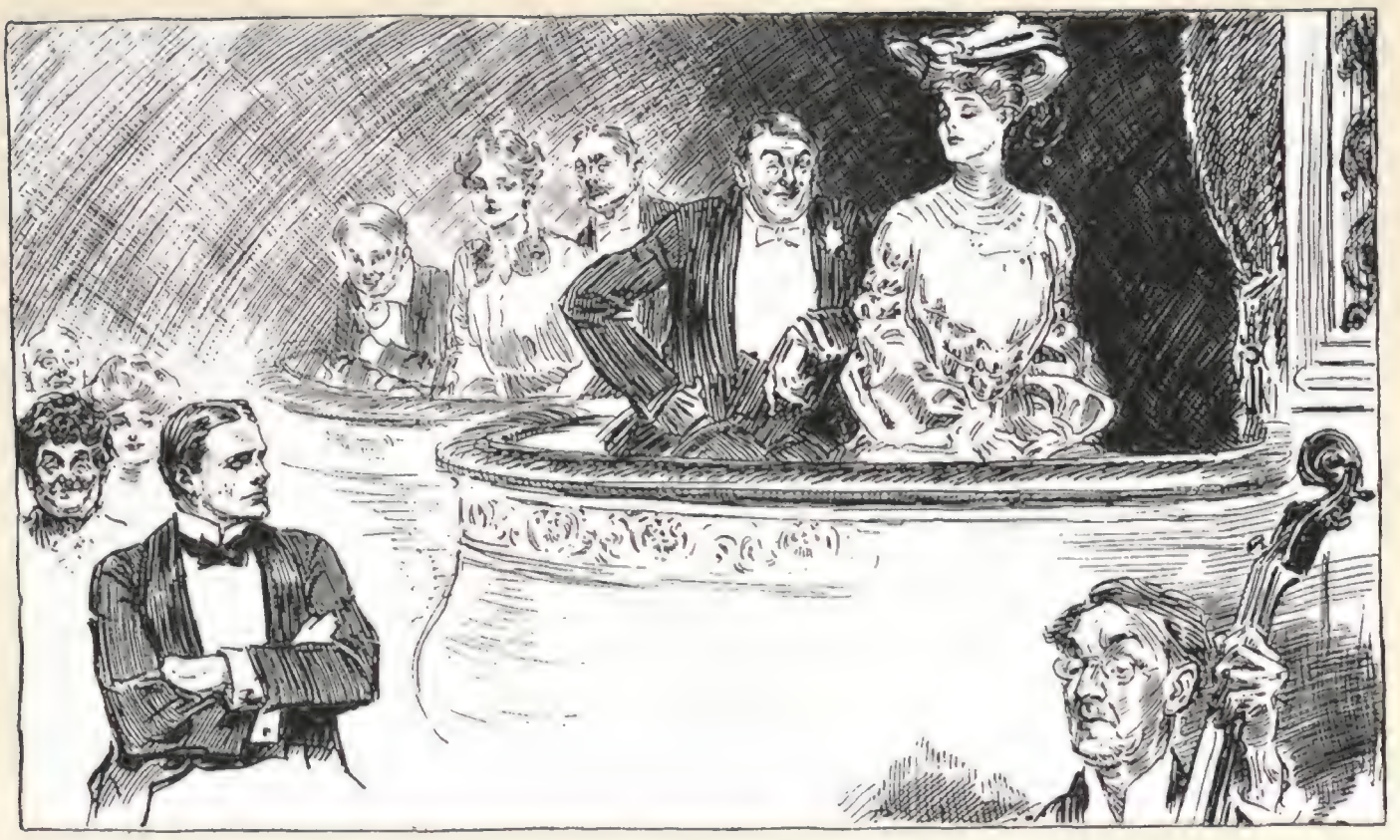

Illustrator Charles Dana Gibson used his friend Davis as the model for his ideal American man of the new era, opposite his elegant, aloof beauties, the "Gibson girls."

In fact, the war was to go on for another two years. The Boers conducted a classic guerrilla war, purged their ranks of the doubters and laggards, invaded the Cape Colony, and forced the British, now under Lord Kitchener of Khartoum, to adopt increasingly ruthless and repressive policies before the Boers were forced to sue for peace.

The war in South Africa was the last serious fighting Davis was to see before World War I, although he went out with high expectations to Japan to report on the Russo-Japanese War, at a fee of $1,000 a week from *Colliers*. His gear now included a German Army cooking apparatus and a six-shooter (Davis took the view that "six shots were enough, for if you didn't hit the other fellow with those, he hits you and you need no more"). But detained by the evasive Japanese for months in Tokyo, and then kept away from battle, he returned to the United States, to his novel-writing and, increasingly, to writing for the theater.

There followed a period of estrangement from Cecil, and they separated early in 1910. Fairfax Downey, whose biography of Davis was written with the assistance of a number of intimate friends of Davis, suggests that their relationship had been a "platonic comradeship" characterized by mutual regard and friendship but no more. An amicable divorce followed.

Then he met Bessie McCoy, a popular actress whose husky contralto song "The Yama Yama Man," about a sort of bogeyman of the period, enjoyed wide popularity. Davis lavished flowers and proposals upon her, and every night he was in the front row, entranced. She would send orders through an usher for him to go away, as she couldn't concentrate with him in the front row, and he would comply, only to resume his presence in the front row the next evening. Such persistence paid off, and they were married on July 8, 1912.

President Wilson's nonwar against Mexico in 1914 proved no more fruitful for Davis than his effort to follow the Russo-Japanese War. Davis covered it in his usual style, dining, sometimes with generals, sometimes with admirals, sometimes alone, "in what was probably the only dinner coat within a radius of 300 miles," his book propped against a carafe that was keeping his champagne chilled. Davis took to describing himself as a "war" correspondent in quotation marks.

He looked with a skeptical eye at events in Europe. Less than a week before hostilities there broke out, he wrote in a letter: "All the papers that had me in Mexico are wanting me again, and others. But, I said I would not go until someone hit someone, and not at all until the big powers got engaged." He need not have worried. Within days the fights among journalists for accreditation to the British Army became almost as fierce as the battles in France. Having irri-

Davis covered it in his usual style, dining, sometimes with generals, sometimes alone, "in what was probably the only dinner coat within a radius of 300 miles."

THE REPORTER WHO WOULD BE KING, BY ARTHUR LUBOW, CHARLES SCRIBNER'S SONS, NEW YORK, 1992

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WHERE THE PAST COMES ALIVE.

Home from the Western Front, Davis posed with 13-month-old daughter Hope in the snow at Mount Kisco, New York, in February 1916. Two months later he died of a heart attack at age 51.

tated William Jennings Bryan, the Secretary of State, Davis lost the one slot available. But Davis was not one to allow petty restrictions to hamper the right of the public to know, or his own right to tell them. He left for Europe with a contract from the Wheeler Syndicate and one from *Scribner's*. He traveled in the royal suite of the *Lusitania* with Bessie, then five months pregnant.

Leaving Bessie in London, he hastened to Brussels, and set himself up in palatial style. With his usual luck, the German Army, marching through Belgium, chose to pass within a short distance of his hotel, and in one of the most remarkable classics of war reportage ever written, he conveyed the quality of their advance.

"All through the night, like the tumult of a river when it races between the cliffs of a canyon, in my sleep I could hear the steady roar of the passing army. . . . This was a machine, endless, tireless, with the delicate organization of a watch and the brute power of a steam-roller. And for three days and three nights through Brussels it roared and rumbled, a cataract of molten lead. The infantry marched singing, with their iron-shod boots beating out the time. In each regiment there were two thousand men and at the same instant, in perfect unison, two thousand iron brogans struck the granite street. It was like the blows from giant pile-drivers. The Uhlans [cavalry] followed, . . . and after them the giant siege-guns rumbling, growling, the mitrailleuse with drag-chains clanking, the field pieces with creaking axles . . . echoing and re-echoing from the house-front. . . . For three days and three nights the column of gray, with fifty thousand bayonets and fifty thousand lances, with gray transport wagons, gray ammunition-carts, gray ambulances, gray cannon, like a river of steel cut Brussels in two."

He sent the report with a messenger who, with all the determination of Jaggers, arrived in London with Davis' copy. It was not the end of Davis' adventures. He was nearly shot by the Germans as a spy, he witnessed their burning of the town of Louvain, he reported on the destruction of much of the Cathedral of Rheims and he wrote a book, *With the Allies*, that pleaded with the United States to get into the war.

But his days in the front line were drawing to a close. Back home to see his family, he died of a heart attack on April 11, 1916, at the age of 51. In front of him on his desk was the preface to a new book, *With the French*, calling for assistance to the Allies "in behalf of a broader civilization, a nobler freedom, and a much more pleasant world in which to live."

He left behind a young wife, a daughter, Hope, just 15 months old, and a reputation for a life as honorable and as vivid as his reporting. "He was as good an American as ever lived," wrote Theodore Roosevelt.

Not least, he left behind the memory of a certain style. There was about him, as Roosevelt also wrote, in a different context, "that 'touch of the purple' which is always so strongly attractive." It was told of him that, fleeing the Germans by train through Belgium, he reached a crowded Channel port and boarded a boat with two companions, Dosch-Fleurot and Irwin. Wrote biographer Fairfax Downey:

"Though obtaining accommodations in that crowded vessel seemed an impossibility, Davis produced keys to three reserved cabins.

"'What luck!' Dosch-Fleurot exclaimed.

"'Not at all, I wired for them.'

"'But still, in this crowd.'

"The resourceful Mr. Davis smiled. 'I signed my wire "Sir Richard Davis!"' he explained."

He left behind him a reputation for a life as honorable and as vivid as his reporting. "He was as good an American as ever lived," wrote Theodore Roosevelt.

South Africa-born John H. Chettle practices international trade law in Washington, D.C. and writes on history, policy and commerce.

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BY TED GUP

JUST BENEATH PARIS, THE CITY OF Light and *joie de vivre*, lies another city, dark, dead and seemingly as vast as Hades itself. Here, under the 14th Arrondissement, may be found the remains of six million Parisians. "*Arrête! C'est ici l'empire de la mort*," warns the inscription above the lintel. "Halt! Here is the empire of the dead."

It would be hard to imagine a more unlikely tourist destination. But on this day, as on most, a long line of the curious and the morbid—French people, Germans, Italians, Americans, Britons, Spaniards, Japanese—snakes its way around a bustling corner on the Left Bank at Place Denfert-Rochereau. They wait to pay 33 francs ($5) each for a ticket to the underworld and an unsparing vision of mortality. Some 200,000 a year

THE DEAD

In this c. 1550 engraving of the Cemetery of the Innocents in Paris, a sheet-wrapped corpse, right, is lowered into a common grave. Eventually, exhumed bones stored in the charnel house, left, would be transferred to catacombs beneath the growing city.

come to explore the infernal reaches that stretch out here over an area equal in size to six or seven city blocks.

There is no guide and only the sparest of text chiseled in stone. A spiral stairway screws its way down the limestone bedrock, dropping 130 steps into a chill half-light. It has the feel of a bunker, except that those it protects have long since shed all vulnerabilities.

Minutes earlier, Adam Smith, a first-year law student at Georgetown University in Washington, D.C., had been enjoying the midday sun as motor scooters, Citroëns and ambulances sped past café awnings advertising pizzas and *glaces*. Now, he stands at the end of a long dark corridor leading to the dead. White obelisks painted upon a black background date to the time of Napoleon. Before him, on either side of a narrow passageway, rises a solid wall of human remains—femurs, tibias and skulls—stacked neatly like cords of firewood, six feet high and stretching interminably into the darkness. Behind the orderly walls is a chaotic mass of decayed and undifferentiated human rubble consisting of fragments and shards, broken skulls and pelvises. Here lies what little is left of victims of the plague, the guillotine and the French Revolution.

Adam Smith cannot resist lifting up a skull that looks out from the bony rampart and posing for a picture. When he puts his prop down upon a mound of other skulls, it produces a hollow sound not unlike that of an empty coconut shell. "I'm sorry," he says, and then, with a shudder, he wipes his fingers on his pants, leaving a luminescent trail of residue.

He takes in all that is around him. Where the few scattered lights cast their beams, green fungus may be seen blooming on the bones. Overhead, drops of cold water bead and drip upon the gawkers. It is as if the limestone ceiling and the walls themselves were weeping. A line of black paint extends the length of the catacombs' ceiling, tracing the way from entrance to exit, a remnant of the

PP. 106, 107 EMMANUEL GAFFARD

J. L. CHARMET, PARIS

days when visitors relied upon candles and when the uninitiated could easily get lost.

Today, the presence of so many visitors has increased the humidity and accelerated decay. Underfoot, gravel brought in to help absorb the moisture crunches with every step. A few skulls gleam bright as pearls, polished by generations of passersby. Staring from the eye socket of one is a shiny ten-centime coin.

For most visitors, the impact of the catacombs is unsettling, to say the least. "Frightening," mutters 12-year-old Ania Schafft, a visitor from Heidelberg, Germany. "I hope I can sleep tonight." Karen Hart, a 19-year-old religion major at Dartmouth College, is also taken aback. "I can't comprehend that many people," she says. "They are so anonymous. We die and who's going to remember us?" It is a question many here ask. The remains present themselves as if they were part of some vast coral reef, a slow accretion of minerals in a tideless sea of time.

This ossuary may seem a site of disregard and desecration, but it was never intended as such. In the Paris of centuries past, the living and the dead had long existed in close proximity. During the smallpox epidemic of 1418, some 50,000 corpses had to be disposed of within one six-week period.

Back then, those who were not nobility had little expectation of a plot eternal. The dead of 20 parishes were brought to the Cemetery of the Innocents, a common burial site near a central marketplace, and wrapped in sheets and placed indecorously in the ground. But it was not to be their final resting place. The soil of the Cemetery of the Innocents was said to be *mange-chair*, or "flesh-eating." Within a matter of weeks, flesh began to fall off the bones. Soon after, the remains were exhumed to make way for still more bodies.

THE BONES WERE THEN CARTED OFF TO A CHARNEL house adjacent to the cemetery courtyard. It was little more than an endless bin of exposed bones. Not far off were stalls of vegetables and fruit stands. Merchants, street performers and prostitutes all went about their business, oblivious to the grim scene nearby.

But as the city grew, so too did the graveyard. Bodies were stacked upon bodies, sometimes more than 30 feet deep. Fear of pestilence grew. A name was given to the rank odor that hung above the cemetery—*méphitisme* (meaning, roughly, the smell of death). It was believed to cause milk to curdle and wine to turn to vinegar.

On May 30, 1780, a common grave cracked open, spilling its ghastly contents into the cellars of adjacent homes along Rue de Lingerie. It was reported that the collapse, accompanied by the appearance of dozens of decomposing corpses, released a kind of toxic gas. On November 9, 1785, King Louis XVI called for all remains to be transferred from the Cemetery of the Innocents to another location. That choice fell to the Inspector of the Quarries. The site selected consisted of several limestone quarries beneath the Montsouris Plain, just south of the center of Paris. On April 7, 1786, three priests consecrated the site that construction workers had prepared and reinforced as an underground ossuary. The actual transfer of bodies occurred at night or at dusk. Convoys of horse-drawn carts ferried the dead, covered by black veils, in a torchlight procession through the streets of Paris.

The remains were dropped through a well-like opening into the catacombs below. Night after night the grim task repeated itself, dragging on from the spring of 1786 until the beginning of 1788. In the years that followed, remains from other cemeteries were brought here, too. In 1859, as Paris underwent a fundamental transformation under

A prankster startles British tourists viewing the catacombs in a scene by the 19th-century caricaturist George Cruikshank.

Napoleon III, and the prefect Georges-Eugène Haussmann built the city's famed broad avenues, still more burial grounds were uncovered. From 1842 to 1860, more than 800 cartloads of human bones were deposited in the catacombs. In each instance, all individual identities were lost, but the origins—the names of the cemeteries and dates of transfer—were preserved. To this day, they are recorded on stone tablets placed before the remains, which came from leper colonies, convents and hospitals around the city.

MANY FRENCH LUMINARIES ARE DOUBTLESS ENTOMBED here. Among those most often cited are the satirist François Rabelais, the philosophers Montesquieu and Pascal, the scientist Lavoisier, the poet and writer La Fontaine, the instigator of the Reign of Terror, Robespierre, his rival who perished at the guillotine, Danton, the writer Madame de Sévigné, Madame de Pompadour, mistress to Louis XV, and even the mother of Mozart. It is probable that all of them found a common grave in the catacombs.

The mystique of these catacombs is not tied merely to the dead but to the living who have taken refuge here in periods of turmoil. During the time of the Paris Commune in 1871, workers rebelling against the government sought haven here. After the government recaptured Paris, soldiers hunted the insurrectionists down by torchlight, sealed off their escape routes and massacred them. During the latter days of World War II, the French Resistance was headquartered in this same subterranean redoubt, among these walls of skulls.

Presiding over the empire of death these days is the catacomb's director, Jean-Pierre Willesme. He is a shy man, less like Charon, the grim ferrier of the dead, than a rumpled Inspector Clouseau. He treats all affairs of the catacombs as if they were state secrets, and seems to have little emotional attachment to the macabre world he oversees. "I am indifferent," he says, shrugging his shoulders. "I don't think I have any ancestors here. I look at it as a curator." He accepted the position, he said, because, well, no one else wanted it.

A thousand times he has walked through the catacombs, past the walls of skulls and femurs, and the stone tablets that speak of death in Greek, Latin and French. There are quotes from Racine, Homer, Virgil, Horace, Rousseau and Scripture. From the *Odyssey*: "It is not right to insult the dead." From Horace: "Believe that every day is your last." Willesme occasionally jests with his friends that he may one day be here among his faceless charges, but in truth he has no intention of joining them. Instead, he wishes to be buried with family in the countryside of Champagne.

Like Willesme, those who work here daily have come to take death in stride. "I'm a little less worried what I will become after death," says 27-year-old Philippe Lucien

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Reinette, a guard. "I have in front of me what I will become. In a certain way, it's reassuring."

Grim though they may be, the catacombs have always held a special fascination for those with an artistic temperament. In 1861, the noted photographer Félix Nadar chronicled this underworld. In one photograph, a laborer is seen pulling a cart overflowing with skulls. In fact, the light was so poor that each exposure had to last for 20 minutes, and Nadar was forced to substitute mannequins for actual workers.

THE CATACOMBS HAVE ALSO BEEN THE SITE OF CELEbrated, even notorious, festivities. In the early hours of April 2, 1897, a secret concert was held here for more than a hundred scholars, artists, writers and assorted members of Parisian high society. Among the pieces performed by some 45 musicians were Chopin's "Funeral March," Beethoven's "Funeral March" and Saint-Saën's "Danse Macabre." When news of the underground soiree was made public, it was seen as scandalous and resulted in the firing of two catacombs workers who aided the concertgoers.

The 1897 concert was hardly the last celebration held among the dead. Each year, in the first week of December, on the day set aside to honor Sainte Barbe, patron saint of engineers and miners, nearly 200 students from the Ecole des Mines are given a key to the catacombs and allowed to throw a massive party. Here they may eat and drink and mill about among the legion of the dead, restricted only by the need to clean up afterward. This past year they were briefly summoned back to remove some bones they'd left behind—chicken bones.

But the occasional festivities sanctioned by the city are few compared with the many clandestine affairs conducted in Paris' other, officially off-limits ossuaries under cover of night. The young people who habitually frequent these catacombs on their own are known as "cataphiles." Some are so brazen as to feature their own Websites complete with photographs of their subterranean exploits, lists of unauthorized entry points and stories of outwitting the patrols from the office of the Inspector of the Quarries, under whose charge the catacombs remain.

Many cataphiles, far from being vandals, come with a pilgrim's sense of reverence. Among those who secretly visit the underworld are Sylvain Margaine, Pierre Jolivet and David Torcy. The three, all in their early 20s, are close friends, engineering students at the prestigious Ecole Centrale and members of a tiny group that calls itself "KTACLOP." The word has no meaning except for the prefix related to catacombs. It is one of innumerable such cliques that are routinely drawn to explore the catacombs, which they enter by manhole or tunnel. "It's the best dark you can find," says Margaine.

Often the three encounter other cataphiles, some of whom bring guitars, even drums. The underground galleries sometimes resound with reggae, heavy metal and French punk music. Some nights the intruders place candles on the skulls and engage in a kind of hide-and-go-seek, concealing secret messages, or conducting medieval war games beneath the streets of the capital. On the walls, they leave their insignias or elaborate paintings of skulls and other images.

On this night, Margaine, Jolivet and Torcy are well prepared. They carry bottles of tap water, butter cookies from Britain, nine pages of detailed maps of the catacombs in

EMMANUEL GAFFARD (2)

protective plastic sleeves, flashlights and plenty of extra batteries. There are no lights where they are going, and they have learned the hard way that there is risk as well as exhilaration.

During an earlier expedition, they set out with two others, each of them carrying a flashlight. The batteries in all but one flashlight died, and they found themselves deep within the catacombs and quarries. The water sometimes rose up to their thighs, and the ceilings were so low that they occasionally had to crawl. They could only guess what would have happened if the batteries in that last light gave out.

Two centuries earlier, a Parisian named Philibert Aspairt ventured alone into the catacombs, perhaps in search of wines believed to be stored there. A doorman at the Val-de-Grâce Hospital, he wore a leather belt to which were attached keys to the hospital. It is believed that at some point along the way his torch went out and he became disoriented and lost. Eleven years later, on April 30, 1804, workers discovered his remains in the catacombs, along with the hospital keys. A few days later, he was buried at the place where he was found—only a few yards from an exit.

Now, an hour before their descent into the catacombs below Montparnasse, the three young engineering students share photographs of their previous exploits. Among these is a picture of a memorial tablet to Philibert Aspairt. The tablet is in a chamber long since closed off to the public. Beside the tablet is a white vase with pink plastic peonies, a kind of votive offering apparently left by a respectful cataphile. As midnight approaches, the trio ready themselves for another adventure. They are sent off with a cataphile's blessing: "*Bonne descente.*"

Unlike bones piled in an area off-limits to tourists (above), stacks displayed on the official catacombs tour (top) are tidy.

THOSE WHO TAKE THE ONE-MILE OFFICIAL TOUR OF the catacombs are usually relieved to come to the end. Before them rises a steep spiral stairway that leads to a small room where a lone skull with a tibia lodged between its jaws rests upon a table. Here visitors must submit to an inspection of their bags by two guards posted at the door. Two or three times a week, purloined skulls and femurs are discovered tucked deep into backpacks. No charges are brought as long as the bones are surrendered.

Even so, some thefts slip by. Not long ago, a priest returned two skulls found in a nearby church, apparently left by a repentant visitor. And a package from the United States, from a "Mademoiselle Vidal," arrived one day addressed to the catacombs. Inside was a letter of apology and a box of long leg bones. But what most visitors take away with them from the catacombs is something much more subtle—a newfound appreciation of sunlight.

There is a strange irony about the catacombs. The stones that were removed from the early quarries went to make the great buildings of Paris—the Louvre and Notre Dame. What was below the earth was raised into the light of day. But those who built and created the majesty of modern Paris—generations of architects, laborers, shopkeepers, soldiers and peasants—were destined to lose their individual identities, reduced to a kind of human landfill. They would occupy the same dark cavities from which the stones of Paris had been removed. They and the stones had traded places. But though the names of those faceless millions have long since passed into oblivion, Parisians would argue that the work of their hands and hearts has not been forgotten. The city of Paris, City of Light, city of gourmands and lovers, of Notre Dame and the Louvre—this is their legacy and the grand monument that is their due.

Ted Gup's The Book of Honor *(Doubleday) is due out next month. He teaches journalism at Case Western Reserve University in Ohio.*

petal power

Photographs by Amy Lamb

Who can imagine a more perfect confluence of design, function and beauty than that represented by the simplest flower? Any one of its attributes alone is miraculous: the vivid or subtle display of color; the exquisite dance of sepal, petal, stamen and pistil; the complex and wondrous fragrance that no perfume can improve upon. Each year flowers call our attention with quiet insistence to the eternal rhythms of nature, striking a resonance that lies deep within us.

Photographer Amy Lamb acknowledges that it was the sheer beauty of flowers that led to her dramatic career shift from work as a scientist at the National Institutes of Health. A photography course at the Smithsonian Institution so inspired the Ph.D. molecular biologist that she decided to devote herself to photographing flowers full-time. It's lucky for us that she did. Lamb creates prints that have a painterly look by digitizing her photographs and printing them on an Iris Graphics printer, which sprays archival inks onto watercolor paper. Lamb would surely agree with the Romantic poet William Wordsworth, who wrote in early spring, "And 'tis my faith that every flower / Enjoys the air it breathes." —*John F. Ross*

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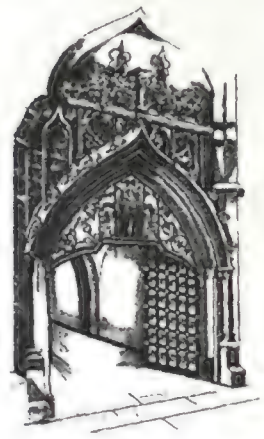

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Requiem for a Middleweight

COLLEGE BOXER CHARLIE MOHR OF WISCONSIN WAS A CHAMPION IN AND OUT OF THE RING, BUT WHY HE DIED REMAINS CONTROVERSIAL

BY JIM DOHERTY

BACK IN THE DAYS WHEN REBELS WITHOUT A CAUSE were hip, Charlie Mohr, a goody-two-shoes if ever there was one, stuck out like a sore thumb. When you saw him bopping around the campus at the University of Wisconsin in his dorky horn-rimmed glasses, long brown overcoat and green Irish-tweed cap, you never would have guessed he was a celebrated national boxing champion. Or that he was one of the most indelible characters who ever turned up in Madison, Wisconsin, or, for that matter, in any other college town. He wasn't just a superb athlete. He was a folk hero, a living legend known as "the saint with boxing gloves" whose decency touched thousands.

Charlie died 40 years ago, on Easter morning. Like many of his classmates, I think about him every time Easter rolls around, but it never occurred to me to write about him until I picked up the *Times* one day and saw a picture of Pete Spanakos on the front page of the Metro section. Pete was, briefly, a teammate of Charlie's at Wisconsin, and when I worked out with the boxing squad that fall we became nodding acquaintances. He pretended to remember me when I called. We arranged to have dinner in New York and ended up talking about Charlie all night. After that, I began the interviews and research that have occupied me, off and on, for the better part of three years now.

Mohr memorabilia includes his letter sweater, medals, the pearl ring he bought for his girlfriend, a plaque (on scrapbook) he planned to give his mother for Easter and his 1959 NCAA tournament trophy.

W
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Charley Mohr
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It didn't take me that long to find out there was a lot more going on with Charlie than many of us realized. The legend was true, as far as it went. He was a hero, for sure—but not the one we all thought we knew. Concealed behind the jaunty facade he beamed at the world was a tormented young man who had the misfortune to end up in a place where he didn't want to be, but who never quit fighting and always tried to do the right thing. I doubt if any other athlete ever made a greater sacrifice for his coaches and teammates, and certainly none had a more profound impact on the history of an intercollegiate sport.

Charles Joseph Mohr was the oldest of four children in a strict Catholic family that occupied a small white house on Westmoreland Road in Merrick, New York. The youngest child, Billy, was afflicted with polio but recovered. The girls, Carol, dark of hair, and Joan, who was fair, adored "Joe," as Charlie was called to avoid confusion with Charles Sr. The elder Mohr was a butcher at the local A&P supermarket. Charlie's mother, Rita, a slender, auburn-haired woman, worked as a stenographer at the Western Union office.

HE WAS A HAPPY, AFFECTIONATE kid who liked to swim, tease his sisters and write poems, but from an early age Charlie was driven by an extraordinary sense of dedication. He wanted to please everyone and could not bear to disappoint. He was a diligent student and an avid reader. He especially enjoyed books about the saints, and there was always that about him, too, a precocious holiness he inhabited like a conch in its shell.

He started delivering newspapers when he was 10. Making the rounds on his bicycle, he frequently pedaled alongside a young man in sweat clothes who was doing roadwork. Dick McNally was an outstanding amateur boxer. One day he showed Charlie the gym in Long Beach, a few miles from Merrick on the south shore of Long Island, where he worked out. It was in a renovated fire station on the corner of Alabama Avenue and Beach Street. A boxing ring was on the first floor; upstairs there were punching bags, some mirrors and a shower.

To Pete, boxing was war—finish off the other guy before he finishes you. To Charlie, it was a dueling contest with gloves instead of swords.

Presiding over the place was a one-time song-and-dance man and boxer named Frank A'Hearn. A stockbroker in New York City, A'Hearn wanted to do something that would help local youngsters stay out of trouble, so he fixed up the gym and started giving lessons. He was assisted by two friends, a World War I veteran who had a soft spot in his skull where he had been wounded, and an ex-pug who ran a bar-and-grill in the old Judson Hotel on the boardwalk. A'Hearn dignified his modest operation with a fancy name: the Long Beach Athletic Association. It produced a number of good fighters in the early 1950s, including McNally, Jimmy May and several other Golden Gloves champions.

After Charlie started hanging around, A'Hearn took him under his wing and taught him the fundamentals—footwork, how to jab, how to slip punches and counterpunch. Pretty soon Charlie was out running every day, like McNally. When A'Hearn finally let him start sparring, it was only light contact or none at all. Jimmy May, who was five years older, moved around in the ring with him and was impressed. The skinny kid had an unorthodox southpaw, or left-handed, stance. He was very fancy.

Charlie Mohr—a boxer? It didn't make any sense. This was a preternaturally gentle kid who eased his sister Carol off to sleep every night by promising to "mind" her; who adjured his siblings, after their father occasionally flew off the handle, to honor their parents, as the Bible instructed; who felt obliged to serve as an altar boy for two and sometimes three masses every Sunday. Charlie was a peacemaker, not a warrior. But Charles Sr., a robust, proudly muscular man, was all for boxing. He thought learning how to defend himself might be just the thing his shy son needed.

When Charlie was ready for competition, A'Hearn helped him make connections at places like the Madison Square Boys Club in Manhattan, where one day he met a brash little rooster from Brooklyn named Pete Spanakos. Pete had an identical twin, Nick, who was also a boxer. Eventually the Spanakos brothers would fight more than 200 amateur bouts and amass 17 Golden Gloves titles. Pete had never seen anyone reading books in a locker room before. Charlie was wearing a white shirt and a tie with a jacket, dressy slacks and nice shoes. He had on a pair of spectacles that looked as thick as the bottoms of two Coke bottles, and he was carrying a valise full of gym clothes and books. He was in the ninth grade at an elite Catholic high school in Manhattan that specialized in preparing students for ordination. He told Pete he had to make use of every spare moment to keep up with his studies.

The first time Pete saw Charlie fight was at a "smoker," an informal program of unsanctioned bouts, in a com-

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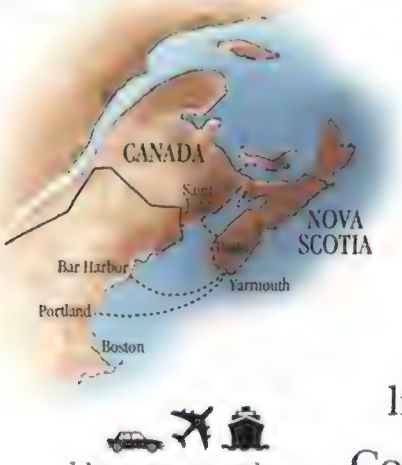

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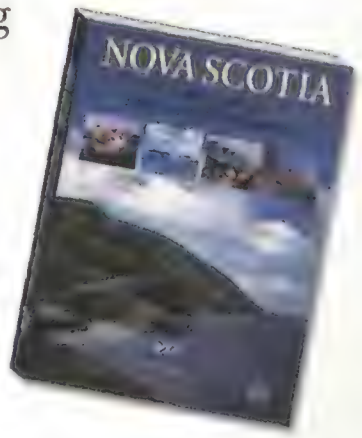

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munity center in the Red Hook section of Brooklyn. Charlie showed up in his fancy clothes, carrying his valise. A notorious neighborhood tough took one look and growled at Pete: "I want that *bleeping bleep*." Arrangements were made and Charlie surprised everyone by boxing circles around the guy.

PETE ADMIRED CHARLIE BECAUSE he never lost his composure, but there was one thing that bothered him: the lack of a killer instinct. To Pete, boxing was war—finish off the other guy before he finishes you. To Charlie, it was a dueling contest with gloves instead of swords. He looked at it the way many another middle-class kid might look at playing the piano or taking ballet lessons, as an art form, a means of self-expression. Several times, Pete watched incredulously as Charlie backed off after stunning his opponent. "What the hell, Charlie—you had him going," he said after one such fight. "Why'd you let up?" Charlie shrugged. "I don't want to hurt anyone, Pete," he said. "I just want to win."

Win he did. When he was 17, the Police Athletic League recognized him as the "best beginner boxer" out of more than 500 who were eligible. The next year he reached the semifinals of the New York City Golden Gloves tournament. He was fighting grown men—house painters, longshoremen and such. A *Daily News* writer described him as "cherub-cheeked" and "baby-faced." The year after that, he again made it all the way to the semifinals. "Mohr showed amazing accuracy with both hands . . . ," the *Times* reported. "In the final round . . . the 18-year-old Long Islander got off dazzling counter-punching volleys."

There were some terrific amateur fighters in New York during the 1950s, including Floyd Patterson, Carlos Ortiz and Joe Archer, who beat Charlie in 1955. Another formidable figure Charlie occasionally ran across was Stuart Bartell, a brawny light-heavyweight from the Canarsie section of Brooklyn. Bartell had 17 fights in the Navy, losing only 1. After he won an Amateur Athletic Union championship in New York, his coach encouraged him to use boxing as a way to get a college education. Bartell wrote San Jose State University in California to inquire about a scholarship. Around that same time, Charlie was writing a letter to John Walsh, the boxing coach at Wisconsin. Walsh checked with a couple of his contacts out East and offered him a scholarship; by then, he had already signed up Pete Spanakos.

John Walsh was the Knute Rockne of college boxing. His Wisconsin squads won eight National Collegiate Athletic Association (NCAA) championships, five more than the closest rival, and 35 individual titles. Boxing was no mere pastime in Madison; thanks to Walsh, it was a passion. On the same night 11,000 people watched Joe Louis defend his professional heavyweight title against Johnny Paycheck in Chicago, more than 15,000 packed Wisconsin's cavernous Field House 100 miles away to see the Badger boxers take on the team from Washington State.

Growing up Irish in a blue-collar Scandinavian neighborhood in Minneapolis, Walsh became an amateur boxing champion with a pulverizing left hook. Coaching as well as fighting on the team at a tiny Minnesota college, he impressed George Downer, the wily publicity director at Wisconsin's athletic department. Intercollegiate boxing was by then a big attraction at some of the most prestigious schools in the country, having become popular after World War I, but Wisconsin was just getting started. The university made Walsh an offer he couldn't refuse: coach the Badger boxing team and attend law school.

In his early years as a coach, Walsh wasn't much older than his boxers. He occasionally got into the ring to spar with them and could fire them up with a rousing pep talk before a match. He was known as a "great corner"

because he could coolly analyze the action during a fight and then dispense shrewd advice in a few well-chosen words between rounds: "Bobby, he'll lead with his right hand. Watch for it and throw the hook."

After his law career took off, Walsh was a busy man, but every weekday afternoon he showed up at the boxers' training facility in Camp Randall Stadium in time to change into sweat clothes and start workouts at 4 P.M. sharp. He ran those sessions like clockwork: shadowbox one round, spar three rounds, hit the heavy bag for one round, hit the light bag for two rounds, jump rope five minutes, then do sit-ups and push-ups. He made sure novices learned to box with both hands—block with the right, jab with the left—and used a special two-man drill that could, when it was done right, be a thing of beauty to watch.

There was a discrepancy between the sport's ideals and what went on in the real world.

Like other college coaches, Walsh was acutely aware of the need to differentiate college boxing from professional boxing, which the public perceived as thuggish and corrupt. College boxers competed as members of teams. In a dual meet, the victorious team was the one whose contestants won the most bouts distributed over a number of different weight classes. A bout consisted of three two-minute rounds. Proponents of the sport preached sportsmanship, fitness and character. Judges were supposed to reward speed and finesse, not brute strength, assigning points on the basis of clean hits and ignoring knockdowns. Eventually college boxers were required to use equipment that provided extra protection and further distinguished them from their professional counterparts—headgear, 12-ounce gloves, padded rings.

Almost from the beginning, there was a discrepancy between the sport's high-minded ideals and what went on in the real world. Walsh, for example, coached many a clumsy farm boy who, as he put it, "couldn't lick his lips," but he also kept a sharp eye out for candidates who already knew how to fight. If they could knock somebody out, well, so much the better. Exhibit A was Omar Crocker. Raised in Minnesota and Michigan, Crocker kayoed 28 opponents as a Badger boxer. Walsh called him the "greatest of all the boxing representatives we ever had."

Gene Rankin was a longtime assistant to Walsh and his eventual successor, Vern Woodward. He told E. C. Wallenfeldt, the author of *The Six-*

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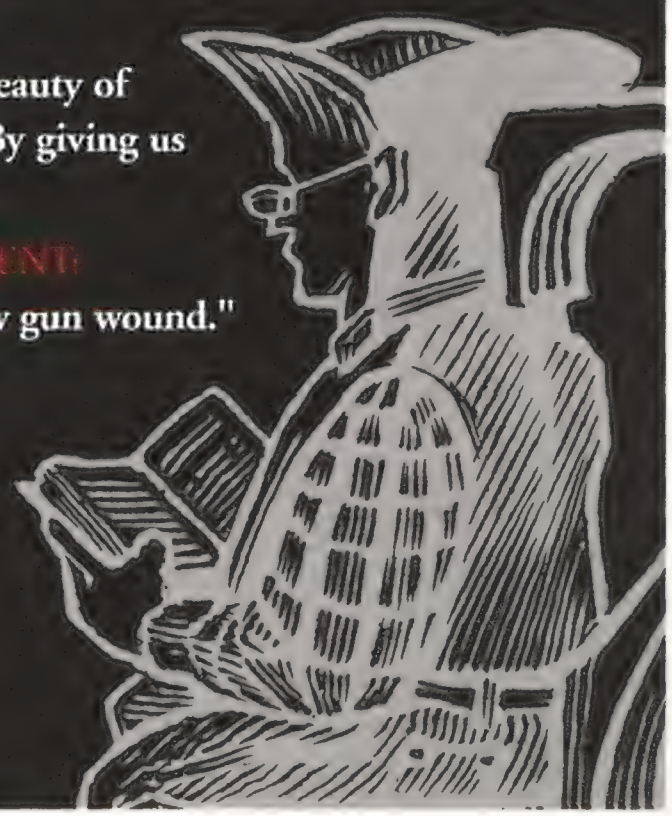

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Minute Fraternity, a history of NCAA boxing tournaments, that the objective was quite simply "to hurt somebody." A three-time NCAA champion at Wisconsin, Rankin said: "I couldn't break eggs, but I was out there all the time trying to knock them out."

The architects of college boxing attempted to enforce a decorum that contrasted sharply with the rowdy behavior of crowds at professional fights. Audiences were not allowed to cheer or applaud during rounds. Some institutions tried to dignify the proceedings even more by requiring formal evening attire to be worn. It was a losing battle. At Wisconsin, visiting boxers were booed lustily just for showing up, and sometimes the abuse got physical. Wallenfeldt recounts one typically boisterous night in the Field House when an Idaho State boxer felt a sharp pain on his backside as he was leaving the ring. Turning around, he was startled to find a rabid townie flogging him briskly with her purse.

Although more than a few faculty members were ringside regulars, others shared the distaste David Fellman felt when he attended a match not long after arriving in Madison from Nebraska. A distinguished professor of political science, Fellman was appalled by the violence he witnessed, both in and out of the boxing ring.

By the early 1950s, many schools were doing something about it. The number of colleges and universities with NCAA-sanctioned boxing teams had plunged from a high of about 80 to fewer than 30, most of them in the West. While paying lip service to boxing's "educational values," institutions for years had made no secret of the fact that they were out to enlist the best amateur fighters around. That meant veterans like Charlie and Pete were sometimes going up against guys in the ring who had hardly any experience at all. The resulting mismatches gave the sport a black eye and made its boosters look like hypocrites. But at its best, when two evenly matched opponents

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went at it, college boxing remained a thrilling spectacle and one a hard core of devotees still wanted to see.

At Wisconsin, the boxers worked out in a big, bright room with three rings, a long mirror for shadowboxing and a large three-minute clock. The walls were covered with shiny white paint. It was drafty and noisy. When you were up there you heard jump ropes (slap, slap), speed bags (tappa-ta, tappa-ta), heavy bags (thunk, thunk), and boxers snorting like seals as they sparred (shuffle, shuffle, whap! whap!). You smelled sweat, stale T-shirts, leather, soap and liniment.

I could tell right off there were two kinds of boxers—Charlie, and everyone else. With everyone else, it was hit and be hit. With Charlie, it was just hit. Nobody, as the saying goes, could lay a glove on him. He sparred with the best fighters. They chased him, tried to corner him, muscled him against the ropes. It didn't matter what they did. He slipped away or ducked inside or spun them around. Once, in a real match, his opponent became so exasperated that he kicked Charlie and was disqualified.

Freshmen weren't allowed to compete on the varsity, but Charlie showed what he could do anyway, winning two university tournaments. As a sophomore, he won seven intercollegiate bouts, losing only two. The year after that he went undefeated, captured the 165-pound championship at the annual NCAA tournament and was acclaimed the outstanding competitor. In the finals, his domination of a superb fighter from Washington State College, Jesse Klinkenberg, was so complete that *Sports Illustrated* airily dismissed the bout as "routine."

Before a fight, Charlie fretted endlessly. Walsh called him a "worrywart." He said a prayer for his opponent in the dressing room and crossed himself in the ring. In the first round, he came out cautiously, almost timidly, feinting, probing, giving nothing away. Then in the next two rounds he went to work, systematically exploiting the tendencies he had detected earlier, making the other guy miss, then making him pay, getting off one crisp combination after another, piling up points, keeping the Field House in an uproar. He fought out of a classic stance, with his hands high, and had an uncanny ability to beat his man to the punch, pouncing like a cat and then performing an odd little skip I can still envision to get his rhythm back. As soon as the bout ended, he warmly embraced his opponent and walked him to his corner. Charlie had a knack for doing the right thing. Returning to the dressing room after a match one night, he found the usual throng of well-wishers waiting for him, many of them stylishly attired in furs and other

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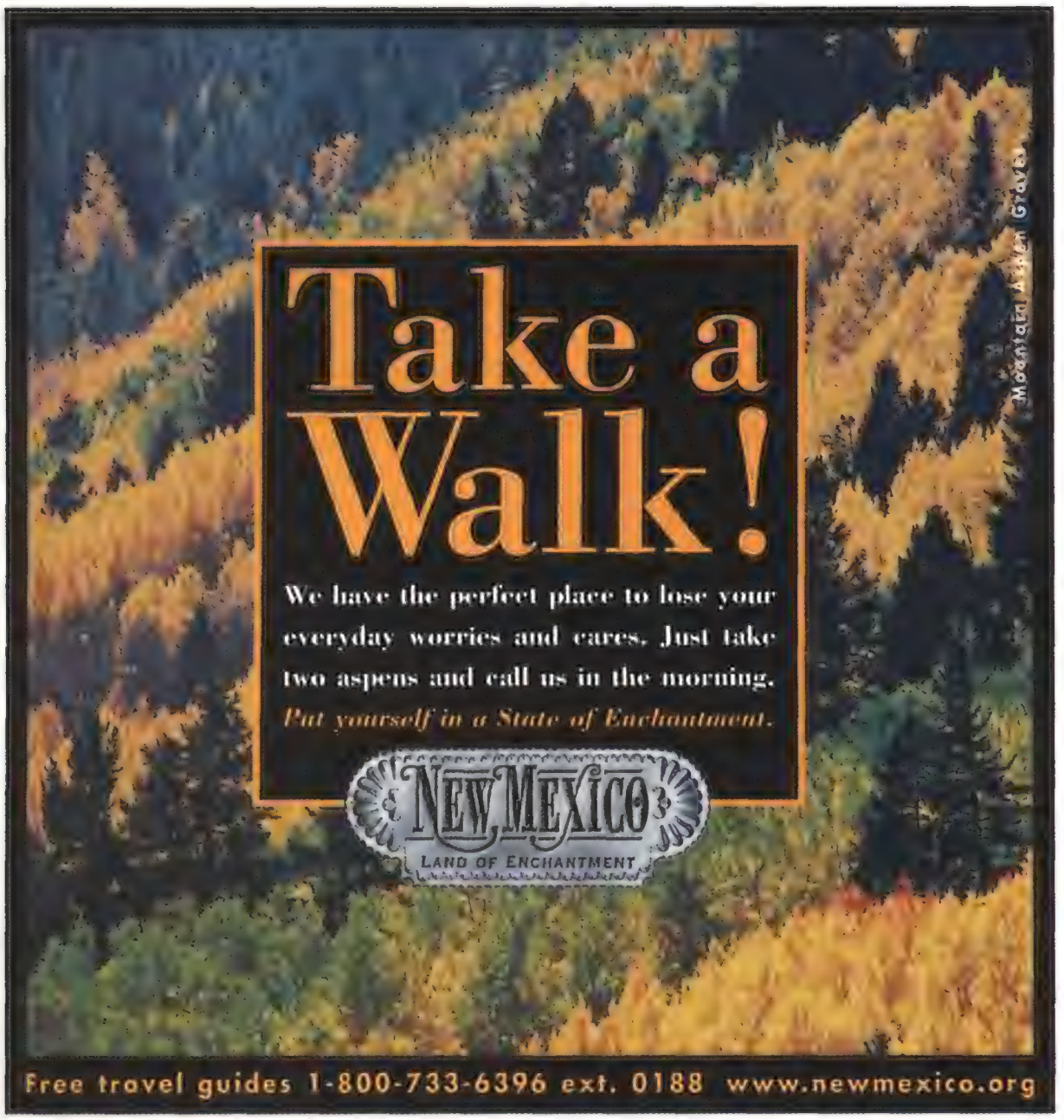
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expensive finery. Charlie made a beeline for a little old lady hanging back self-consciously on the edge of the crowd. He gave her a big hug and chatted for several minutes before moving on. The woman was a cook he knew at Paisan's, the downtown restaurant where he worked as a waiter.

AT FIRST, LIFE OUTSIDE THE RING was good. Madison was unlike anything Charlie had known, a beautiful little city surrounded by lakes and farms. The streets were safe, the people were friendly. There was always some kind of a party going on, and football weekends were crazy. When he was a freshman, he roomed with Pete and two other boxers. After that, he bunked with Paul Brandle, a wrestler, on the unheated third floor of a building behind St. Paul's Church, just off campus, that served as the dormitory for several priests. In addition to holding down his job at Paisan's, Charlie, along with "Paulie" and two other students, worked as a houseboy at the church, doing janitorial chores, washing dishes, ushering.

The other houseboys, often with one or more of the younger priests, regularly launched midnight raids on the kitchen. Occasionally they shamed Charlie, who was always hungry, into joining them. He was terrified of being found out by Della Sabish, the housekeeper-cook for the head man, the Reverend Alvin Kutchera, a hugely respected figure in Madison. Della Sabish doted on Charlie and he did not want her to know he was "stealing."

Everyone doted on Charlie—the Jesuits who engaged him in long philosophical discussions; Father Kutchera, who became his confessor and counselor; students he befriended in class without ever divulging that he was the famous boxer; girls he met socializing at the Newman Center in St. Paul's—Kappy Fitzgerald and Jean Huston, among others, and the beauteous Sheri Ball, who became one of his closest confidantes; the gang he sang "Good-

night Irene" and "Down by the Riverside" with at the Pub, a popular saloon on State Street; and, of course, his sisters, who followed Charlie to Madison to be near him and became part of his eclectic circle. With his lopsided smile, high-pitched voice and distinctive New York accent, which he delighted in exaggerating for Midwesterners who, he said, "talked funny," he was irresistible—endearingly goofy, deeply spiritual and staunch in his views. Catching the news on television one day with a friend, he watched a gripping story about a solitary little black girl caught up in the tensions of school desegregation in the South. It wasn't just a political issue or a big media thing to Charlie, it was a deeply personal matter of right versus wrong. "She's a real hero," he told his friend. "It takes someone like that to make a difference in the world."

Charlie was coming around to the view that the sport he had excelled at was against his nature.

Charlie wanted to make a difference in the world, which is why he had decided, when he was still quite young, to become a priest. He cared about people. After Billy LeClaire, a member of the boxing team who worshipped him, was killed in an auto accident, Charlie went to the wake in Columbus, a small town near Madison. When he got there, he became so moved he took off a championship ring Billy had admired and slipped it onto a finger of the dead youth's grief-stricken brother. It was a gesture the LeClaire family would never forget.

He was just as apt to get involved with a panhandler. On one of its annual Western road trips, the Badger team was dining at a San Francisco restaurant one night when Vern Woodward, the assistant coach, noticed a stranger sitting next to Charlie. "Oh, hello, Coach," Charlie said when Woodward went over to check the guy out. "This is a good friend of mine. I hope it's all right if he eats with us."

On Sunday mornings, Charlie arose early and drove with Father Phillip Keyes, a priest at St. Paul's, to a girls' reformatory ten miles south of Madison. While Father Keyes served mass in the gymnasium, Charlie assisted him at the altar. After mass he chatted and shot baskets with the girls, many of whom came to regard him as their friend. Then he got back in the car with Father Keyes and returned to homework, jobs, workouts.

There came a time when it all began to be a bit much. The mythical Charlie Mohr everybody talked about, the

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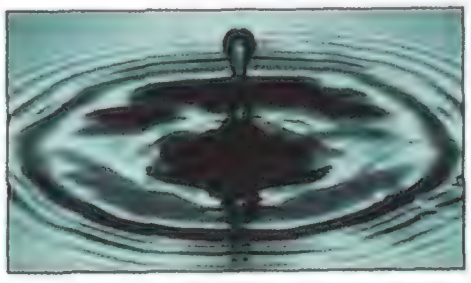

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renowned gentleman-scholar-athlete, was creating expectations the real one couldn't fulfill. Charlie was asked to make speeches, people invited him to their homes. Whenever something extra had to be done at St. Paul's, whether it was tending to a leaky pipe in the basement or handling a drunk who stumbled in the door, Charlie was the one who ended up doing it. When he stayed up late one night helping Sheri Ball cram for an exam, she knew he had to take one the next day, too, but she didn't worry about it because she assumed, like everyone else, that Charlie "pulled" A's without trying. In fact, he was barely keeping his head above water and even ended up on probation one semester.

HIS PROBLEMS WERE MORE THAN academic. Paul Brandle and others who observed him at close hand could tell he was obsessing about everything—girls, his studies, his sisters, his fights, his future. He worried increasingly about his courage, of all things. John Drye, another close friend and teammate, noticed that Charlie was often paralyzed by indecision over the most trivial matters. Father Joe Brown, one of the priests at St. Paul's, was alarmed by what he called Charlie's "eternal frown." Charlie told Sheri and others that he was losing his self-confidence and agonizing over the conflict between his deep faith and carnal love. "He was having a very hard time dealing with life and a very hard time dealing with sex," Sheri Ball told me years later. By then he had abandoned his long-cherished goal of becoming a priest and settled on a career in social work instead.

In the end, it boiled down to boxing. After all that time, Charlie was coming around to the view that the sport he excelled at was against his nature. It was getting harder and harder for him, he confessed to friends, to deal with the pressure and the toughness he had to face when he got into the ring. Yet at the same

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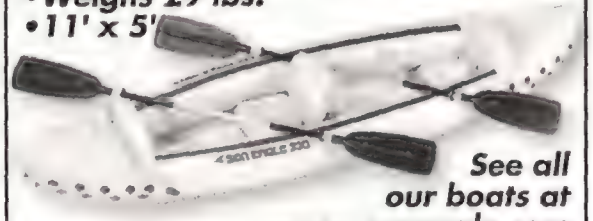

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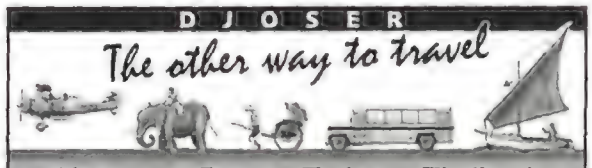

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time, he felt bound by the commitment he had made to his teammates and coaches. He believed he had no choice but to hang in there until the end of his senior year.

Charlie had always been a control freak. He was compulsively neat and cleanly, as much a perfectionist about orderliness in his personal affairs, John Drye and others had noticed, as he was about boxing. One of the worst things that could happen to someone like him was happening: he felt trapped by circumstances beyond his control. There was too much to do, there were too many masters to serve. We didn't have "defining moments" in the Fifties, we had ambiguity, and Charlie was saddled with more than he could handle.

Between 1958 and 1960, Charlie was hospitalized at least once, and possibly more than once, for treatment of a nervous disorder serious enough to require electroshock therapy. The procedure still in use at that time at the hospital where his psychiatrist practiced was quite primitive, according to another doctor I talked to who was affiliated with that same institution in the late 1950s, and it could be very rough on patients.

When Charlie got out of the hospital, his friends were dismayed. He was not the same. He was plagued by memory loss and seemed more obsessive, preoccupied and on edge than ever. He couldn't make a decision about anything. Should he go to work out first and eat later, or eat first and work out later? Should he take a shower and then study, or study first? It was clear his treatment had not made his problems go away.

It most likely didn't help matters any that he was involved, for a time, with an older woman who was the mother of two children. Nothing could have been more out of character. Those of his teammates who knew about the affair were flabbergasted.

The good news was Darlene. Charlie met her at Sears, Roebuck and Co., where they both had a job that sum-

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mer. Darlene Dobeck was a tall, pretty coed with short blonde hair from Schofield, a small town up north. She had never had a serious boyfriend before. She and Charlie soon became inseparable. He called her "Dilly" because she was fond of a hit song that went: "Lavender blue, dilly, dilly, lavender green. If I were your king, dilly, dilly, you'd be my queen." He taught her how to do the Lindy at a dance hall, where Charlie liked to drink a few beers and tell jokes while Darlene sipped some fruity concoction that was served with a little umbrella sticking out of it. He told her he had been seeing a doctor, but he did not tell her it was a psychiatrist or mention his breakdown.

HIS TEAMMATES KNEW CHARLIE wasn't right that last year. Some had informal meetings about him; so did the coaches, who also met privately with Charlie. He just couldn't keep his act together. He had bad moments in fights he should have won easily and, worse, he was starting to get hit. Midway through the season, one of his best friends on the squad, Wally DeRose, told Woodward he thought Charlie should be benched for his own good. "He's lost his concentration and desire, Vern," Wally said. "You know once a boxer loses his desire he's in trouble." Woodward promised to consult with Walsh, who had quit coaching but was still involved in the program. Later Wally was told they had decided to do nothing—to, in effect, let Charlie fight his way out of it. Wally then tried to persuade Charlie to quit, but he demurred. The others were counting on him to help Wisconsin win another national championship, he said, and he couldn't let them down.

For years, Charlie had looked forward to fighting in the Pan-American Games and the Olympics. He and Pete Spanakos used to daydream about it together. When he passed up the Pan-American trials in Madison in 1959 (the star of the show was a tall, garrulous prodigy named Cassius Clay), Pete knew something was wrong. "Charlie, this is what you and I always wanted," he said. Charlie replied, "Pete, my heart just isn't in it anymore."

The NCAA boxing tournament was held in Madison in 1960. Charlie and five other Badgers qualified for the finals, when Charlie's opponent would be none other than Stuart Bartell of San Jose State. He and Bartell had split two bouts earlier in the season, with Bartell winning in California, when he dealt Charlie the first knockdown in his intercollegiate career. After the second fight, in Madison, Charlie felt spooked. He told Paul Brandle: "That guy didn't fight me. He just studied me." He was extremely agitated about meeting Bartell again. For his part, Bartell figured the only way he could beat Charlie in Madison was by a knockout. He trained before the tournament with Dave Nelson, a teammate who was a southpaw, like Charlie, and he stalked him relentlessly, aiming, Nelson told me recently, "to knock my head off."

The finals took place in the Field House on the night before Palm Sunday. My wife and I were there, along with more than 10,000 others. The previous afternoon, Charlie had visited Goodman Brothers jewelers on State Street to purchase a pearl ring he was going to give Darlene at her birthday party after the fight. When Bob Goodman told Charlie he would be rooting for him, Charlie said, "I'll be so happy when I can put boxing behind me." Saturday afternoon, he stopped by Paisan's, the restaurant where he worked, to ask the owner, Roy McCormick, if he had tickets for the fights. When McCormick confessed he did not, Charlie ran up to the Field House and got him a couple. He told McCormick, too, that he would be relieved when it was all over. He also visited with Sheri Ball that afternoon, and reiterated that he would never fight again. He seemed worried and upset. He told Sheri he was giving Darlene a ring that night, and had to

When they met for the NCAA championship in 1960, Stuart Bartell, left, came out swinging and Charlie Mohr fought his usual fight, evading and counterpunching.

get up early in the morning to help serve mass at the reform school.

Since his bout with Bartell was the eighth one on the card, Charlie didn't emerge from the dressing room until a little after 9. As usual, one of his mascots, a crew-cut youngster named Tommy Moen, was waiting outside the dressing-room door to wish him well. After they exchanged greetings, Charlie walked across the hallway and started jogging down the aisle between the bleachers. I remember seeing some of the spectators over there craning their necks, and then suddenly the spotlight zapped him, and the pep band tore into "On Wisconsin." Charlie was engulfed in a tremendous roar. He was resplendent in a white satin robe with red trim, and had a white towel draped over his head that glowed like a nimbus as he made his way toward the ring. People were shouting, "Good luck, Charlie!" and "We love you, Charlie!"

The excitement in the "old barn," as the Field House was affectionately known, was almost unbearable. The results of the preceding bouts proved Charlie's instincts had been right all along. His coaches and teammates *were* counting on him. If he beat Bartell, Wisconsin would win its ninth national title. If he lost, San Jose State would win its third in a row.

The first round went pretty much as expected. Bartell, an imposing hulk and splendidly fit, charged out like a bull, and Charlie did his matador thing, evading, countering, winning the round handily. Then about midway through the second round, the unthinkable happened. Charlie came off the ropes and ran into a wild haymaker that landed flush on the left side of his forehead. It was a terrific sock and he went down hard. He hopped up, looking dazed, and took a mandatory nine count. Then Bartell swarmed all over him, throwing punches with both hands. Charlie's sisters and Darlene, sitting together, screamed hysterically until the referee stopped it.

Charlie rested for a few moments on the stool in his corner. John Walsh, who was refereeing the next fight, bent over him and murmured, "Charlie, I'm so sorry about this." Charlie replied: "I guess I zigged when I should've zagged." That afternoon, he had slipped a pair of tickets under the door of Arnold Moen's apartment across the

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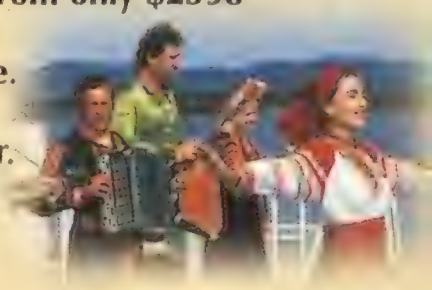

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street from the Field House. Arnold, a fireman, was Tommy's father. "You're still the champion with us, Charlie!" he shouted as Charlie ducked through the ropes and walked back up the aisle.

In the dressing room, Charlie apologized to the several teammates he found waiting for him there. Complaining of a headache, he stretched out on a mattress, quickly lost consciousness and went into convulsions. Within moments, an ambulance arrived and the attendants carried Charlie out on a gurney. One of his arms slid off and hung limply, and the same thought occurred to several stricken bystanders as they watched him go by: he isn't going to make it.

THE NEUROSURGEON AT UNIVERsity Hospital, Manucher Javid, did everything he could, but by the time Charlie was wheeled into the operating room it was already too late. The force of Bartell's blow had inflicted a devastating injury on the opposite side of Charlie's brain. Hemorrhaging was severe, causing extensive irreversible damage, and Charlie died a week later without ever regaining consciousness.

Tommy Moen was in church with his parents that Easter morning when the pastor announced Charlie's death. He burst into tears and was inconsolable. So, too, were many others. The outpouring of public grief was compounded by a profound sense of guilt and not a little anger. Charlie's death was a national story that many faculty members felt reflected badly on the university, especially in light of the disclosure by a local newspaper that Charlie had recently been under psychiatric care, which implicitly called into question his fitness to fight.

David Fellman was having lunch with several colleagues at the faculty dining room in the Student Union when he remarked what a shame it was that such a nice young man had died because of such a "crumby sport." One of the others at the table challenged him: "OK, if you feel so strong-

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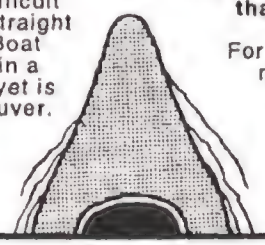

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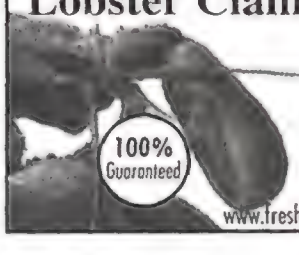

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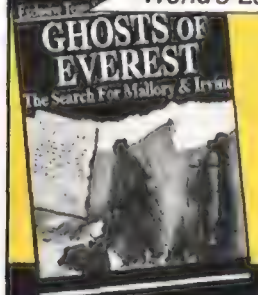

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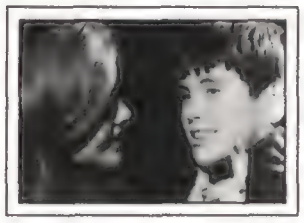
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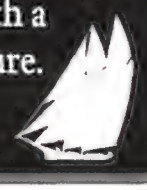
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ly, what are you going to do about it?" Fellman turned over the paper place mat in front of him and wrote out a resolution on the back of it recommending that the faculty vote to drop boxing. Several of the others at the table signed it. When it came up for a vote at the next faculty meeting a couple of weeks later, it was overwhelmingly adopted. Not long after that, the NCAA announced that it was, in effect, dropping boxing. The reason given was lack of interest, but everybody knew better. "Charlie's death is what killed it," John Walsh emphasized when I interviewed him three years ago.

That may have been the end of big-time college boxing but it wasn't the end of Charlie. His story is still being told and retold—almost always incorrectly. Nearly everyone I talked to who knew him or knew of him thinks he died because he had a preexisting aneurysm, or weak spot, on a blood vessel in his brain. The fact that it burst during a boxing match, the story goes, was coincidental. It could just as easily have happened while he was walking up a flight of stairs or, as Walsh put it, "blowing his nose." Boxing, in other words, got a bum rap.

This exonerating version of Charlie's injury began making the rounds not long after his emergence from the operating room. According to Walsh, it was initiated by a prominent member of the university's medical-school faculty, Anthony Curreri, who, though not in attendance during surgery, was among the first to talk to Javid. Curreri, himself a former university boxer, had a long association with the boxing program and Walsh, was chairman of the NCAA's boxing rules committee and served as director of the tournament that year. Javid briefed Curreri, outside the operating room, while he and his assistants were still trying to get Charlie's profuse bleeding under control. His surgical gown was spotted with blood. He told his colleague that Charlie had suffered an acute subdural

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hematoma as the result of a blow on the left side of the head. He did not mention an aneurysm because he detected no evidence of one. He subsequently and repeatedly insisted that no aneurysm was involved. Nevertheless, Walsh told me, Curreri informed him and others awaiting word at the hospital that Charlie's injury was the result of an aneurysm. They in turn passed it on, and as time went by, the aneurysm explanation was repeated so often by so many that it became the accepted version of what happened, and still is to this day. When an announcer recapped the history of college boxing during a professional bout televised at the Field House last year, he reported that it was discontinued after Charlie Mohr died as the result of an aneurysm.

PEOPLE REMEMBER WHAT THEY want to remember. Many who were in the Field House 40 years ago believe, as John Walsh has always maintained, that Stuart Bartell never landed a solid blow and, even more mind-boggling, that Charlie was not knocked down. One woman is convinced her boyfriend helped carry Charlie out of the ring.

John Drye saw what happened, twice—at ringside and on film. Now a physician in Montana, Drye was one of the Badger boxers who didn't make it to the finals that night. He was stopped in a preliminary bout by Bartell's sparring partner, Dave Nelson, who went on to win the 125-pound championship. The week after the tournament, Drye and several other members of the varsity squad watched intently as Woodward and Rankin projected a film of the finals. Drye told me he vividly recalls what happened in the second round because Woodward ran it over and over again to show Charlie coming off the ropes, getting hit and going down.

One of Walsh's many innovations as a coach was to have every dual match and tournament in Madison filmed by

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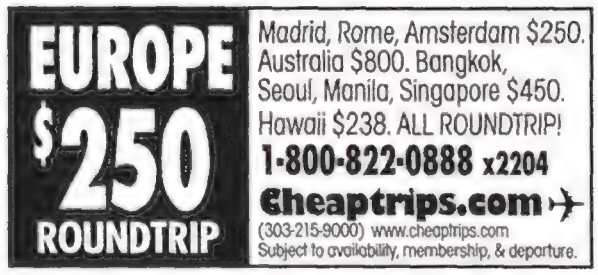
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a university photographer, so he and his boxers could critique the fights afterward. A copy of each film was routinely sent to the NCAA for safekeeping in its archives. The original negative and the other copy were stored with a growing collection of sports films and photographs in two cramped rooms on the fourth floor of Camp Randall Stadium. Today most of that stuff is still there; the film of the 1960 NCAA boxing tournament is not.

Before Charlie died, the athletic department was instructed to conduct an investigation to find out what had happened, and why. As part of that undertaking, some enlarged photographs were made from the original negative of the fight film. Subsequently, in a letter to the president of the university, the dean of the medical school described Charlie's brain damage as the type "that would be expected from a heavy blow . . . as the pictures of the bout have verified." Neither the pictures nor, apparently, that letter was ever released to the press. After Charlie died, the investigation petered out; the film and pictures disappeared.

BY NOW OTHER RECORDS PERTAINing to Charlie Mohr have suffered a similar fate. I found his file at the athletic department empty, except for a couple of publicity photographs and releases. I could locate no trace of the athletic department's inconclusive investigation. The records of his electroshock treatment were unavailable. Charlie's death was not recorded in the Dane County coroner's daily log. His academic transcript, too, raises vexing questions, and the scholarship established to perpetuate his memory has not done so. When I called the officially designated 1999 recipient, a member of the varsity golf team, he told me he had never heard of the Charles Mohr Memorial Scholarship and didn't have the foggiest notion who Charlie was or why anyone should remember him. Over the years, the university has maintained little or no contact with

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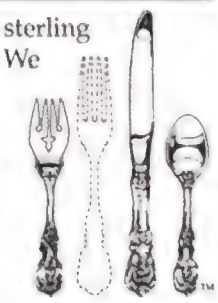

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donors and Mohr family members.

As for that controversial second round, my one last hope for tangible evidence of what really happened rested with the NCAA. For more than a year, I badgered the organization for a duplicate of its copy of the 1960 film which, I was informed, was in an underground storage facility in Kansas. Finally one day a Federal Express man showed up at my front door and handed me the long-sought prize.

I popped the tape into the VCR and sat back to watch all those valorous young men who are old now. And sure enough, there was Wisconsin's plucky little Jim Mack, who had no business whatsoever being in the same ring with Heiji Shimabukuro, of the College of Idaho, getting outgunned but not humiliated, not by any means. There was our wonderful Brown McGhee, banging out a close decision over the estimable Joe Bliss from Nevada. There was Nevada's Mills Lane, outpunching his game Badger opponent, Gary Wilhelm. There was Wisconsin's Jerry Turner, winning a ferocious slugfest with Sacramento State's Terry Smith. Finally, there was Charlie, looking so innocent and vulnerable.

THE FIRST ROUND WENT PRETTY much the way I remembered. Then came the moment of truth: the second round. But there was no second round. I played the tape over and over again and each time it was the same. The second round had been edited out.

I had the tape shipped back to the photo lab in New York City that made it. Technicians there told me they could not determine when or how the deletion had occurred. Who did it? Why? None of the people I interviewed who were familiar with film and photo-lab procedures at the university in those days had a clue. Whatever the explanation, the deed was done. Like Charlie, the only visual record of the most important round

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ever fought in the history of college boxing was gone, gone, gone.

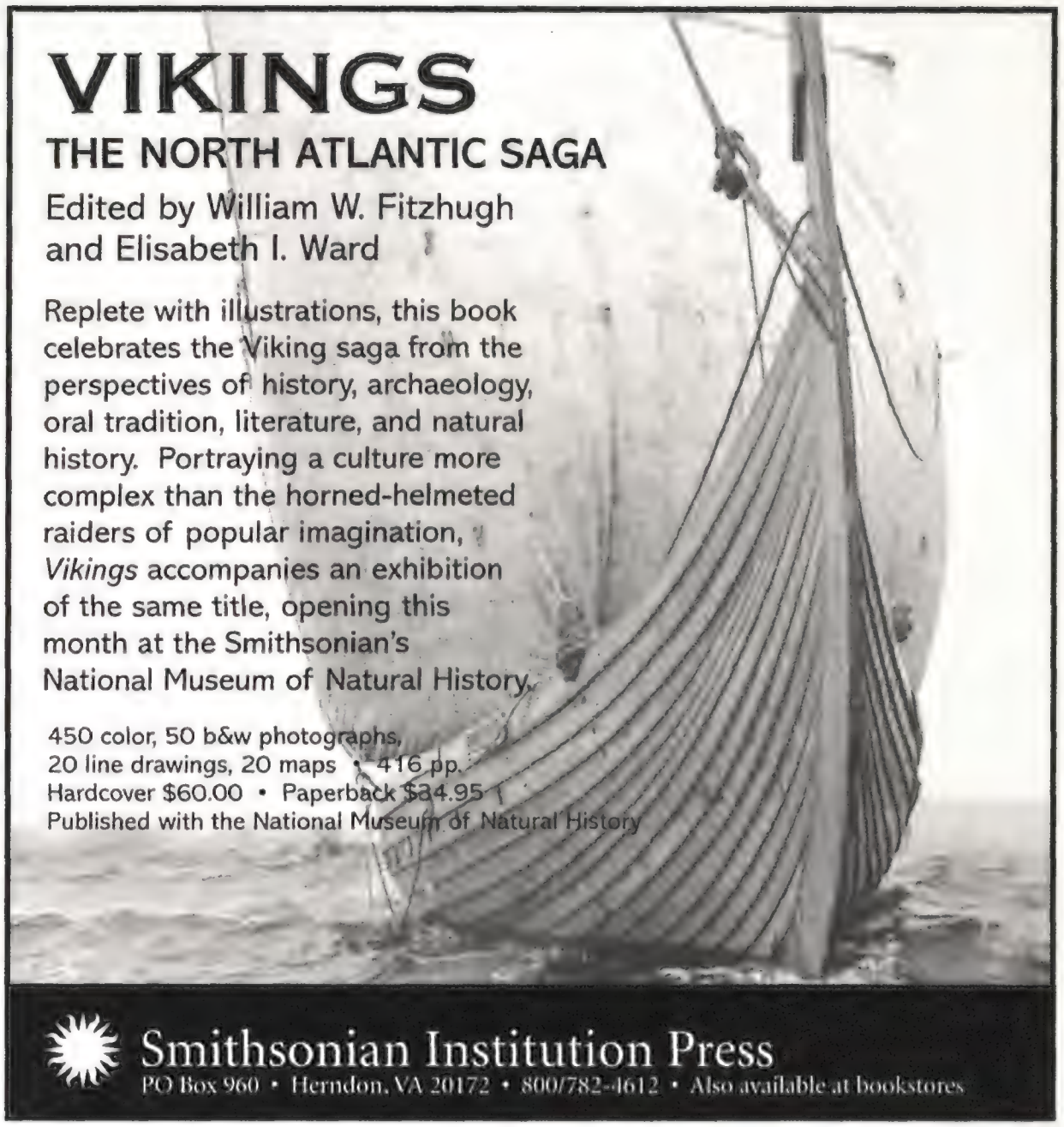
Four decades is a long time, but for some the pain of Charlie's loss has yet to subside. His sister Carol became a teacher, married, had a family, but couldn't talk about Charlie for 25 years. His parents refused to be interviewed for this story because, his mother told me on the phone, "it's still too hurtful." Darlene became a librarian and went on to have a family. She still treasures Charlie's letter sweater, and the ring he intended to give her.

Perhaps no one suffered more than Stuart Bartell, who was dejected for years. When his daughter was struck by a car and killed, he could not help wondering if it was "God's retribution" for Charlie's death. Eventually he pulled out of his slump, enjoyed a career as a high school coach and became a world traveler. He is a handsome, burly man with a full beard and an infectious laugh. When we lunched together in San Jose not long ago, he was reflective.

Like everyone else, he remembers the fight his way. He recalls connecting with numerous "solid shots." He remembers Charlie going down not once but twice, and he remembers thinking they should have stopped it sooner than they did; Charlie was getting hit too much and not reacting effectively. "I wouldn't say I ever got over his death," he mused. "It was a watershed event in my life. But you have to move on."

Tommy Moen, now a social worker in Madison, retains a poignant memory of Bartell. Charlie introduced them a few days before the NCAA finals. They encountered each other again, the little kid and the big fighter, wandering around the Field House after the ambulance had taken Charlie away that night. Both were dazed and upset. "Hello, Tommy," Bartell said softly. "I'm sorry I hurt your friend."

Board Editor Jim Doherty wrote last year about the wilds of southern Utah.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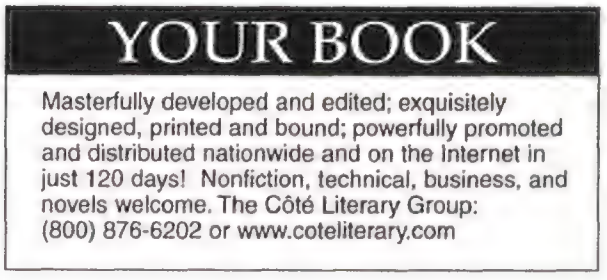
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THE LAST PAGE

Earning a Halo Can Stink to High Heaven

BY JUNE LEMEN

IT WAS MY SPIRITUAL ADVISER who brought it up. When I simply could not move beyond an event in my life that I considered a sin, he asked if I was familiar with the concept of penance: doing something good to atone for something bad. "God forgave you before you even thought about it," he said. "Now you need to forgive yourself. Doing penance will make it easier."

I called the local soup kitchen and told Sherri, the chef-cum-manager, that I wanted to do something that really needed doing. I pictured myself ladling out stew to the poor and homeless, who would smile at me gratefully. I imagined that I would become the confidante of the people at the shelter, listening to their stories and helping them get their lives on track.

Instead, I became the shelter's one and only laundress.

I hate doing laundry. But every week I washed all the aprons worn by the volunteers who serve the food, the chef's aprons, and the washcloths and dish towels. It was the smelliest laundry I had ever washed because some of it sat in the soup kitchen for days before I picked it up. It was frequently wet and mildewed. Sometimes the stuff would cook in my hot car like compost. No one willingly rode shotgun with me and my penance.

I dreaded spaghetti night because it left nearly impossible stains. I bought heavy-duty detergent with built-in stain lifters. Sherri liked to have her aprons looking good, so I used bleach and starch for the first time since college. If I was going to be a soup-kitchen laundress, I was going to be a damned good soup-kitchen laundress.

I took out my sewing basket and reattached apron ties to waists. I scrubbed at extra-bad stains with a nailbrush and Fels Naptha. I learned that, when all else fails, vinegar can make even the foulest laundry smell sweet. I stacked the folded aprons by color, arranging Sherri's ironed ones on top, and put them into a nice, clean clothes basket.

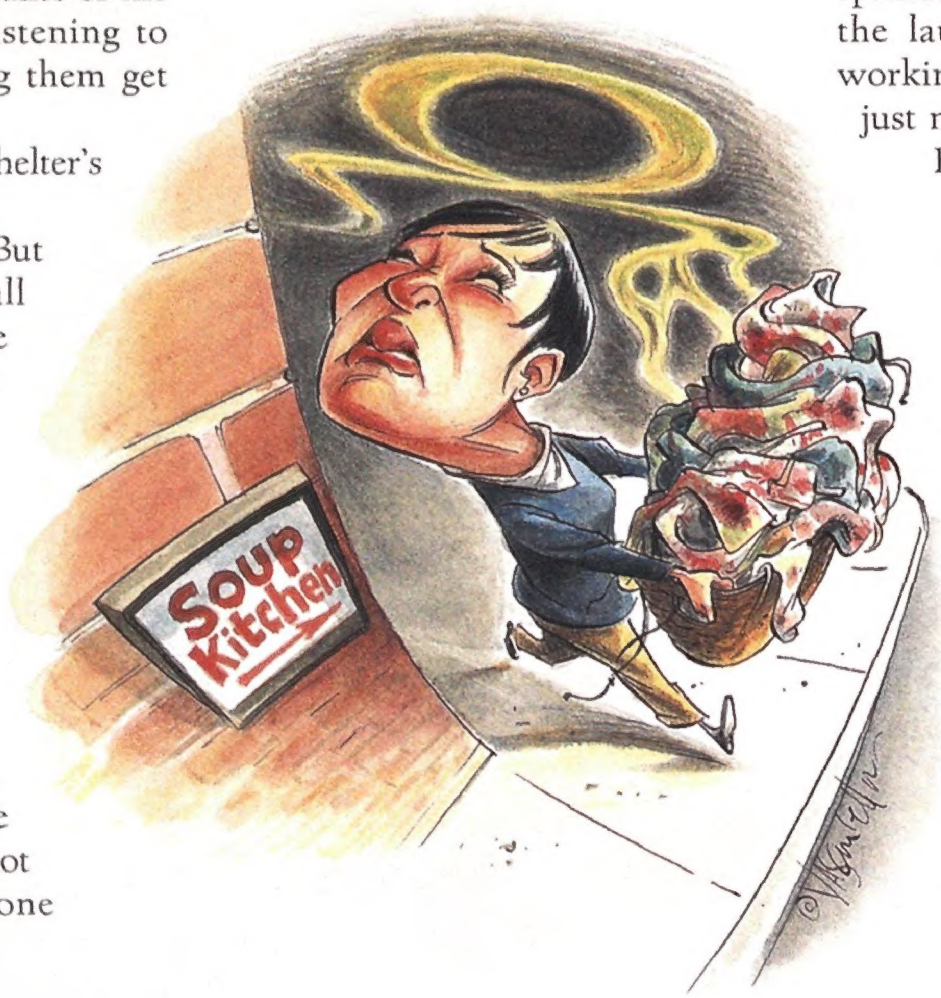
I started to really care about the laundry. When the chef's aprons became so worn from constant use and harsh bleaching that I could put my fingers through them, I bought new ones from Williams-Sonoma, and I requested that "Sherri" be embroidered in navy blue on them. When there seemed to be a shortage of dish towels in the basket, I'd add some of my own.

After two years of fluffing and folding, I concluded that I had made amends. "I'm forgiven," I told my spiritual adviser. "I don't need to do the laundry anymore, but I like working for the soup kitchen. I'm just not sure what else to do."

He said: "Ask God."

"God?" I prayed. "I was grateful for this opportunity to serve you with sweat. But now I'd really like another job."

Some people have God's will revealed to them in dreams, others by intuition. I'm guided by happenstance. Not long after my prayer, I was invited to become the clerk of the board of directors of the soup kitchen. I know God had something to do with this. I hate taking notes.



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